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Watchmaker, Jeweler, Silversmith, Diamond Merchant, and Optician.

VOLUME XVII.

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The

Watchmaker, Jeweller and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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Who Makes our Laws?

We have received numerous inquiries respecting a circular which is said to have been issued by the Inland Revenue, notifying the intention of the Government of putting on a new reading of the Merchandize Marks Acts, and after a lapse of two months from the date of the notice, such names as "aluminum gold" and the like would be considered a breach of the Act. We confess we were a little curious to know whom we had to thank for this step, of the magnitude of which we were sure he had not the slightest idea, and being desirous of convincing him of this fact, we went to the Inland Revenue Office, where, after having interviews with the heads of several departments, we were assured they had done nothing of the kind, nor did they even think it was a thing the Inland Revenue could do at all! ! The circular in question is no doubt one we saw some weeks ago, which we must say rather astonished us. It is not an English production at all, but is issued from the Indian Inland Revenue Office, Customs Department, where it appears that a Mr. John Campbell, a collector, is using very large personal pronouns, always in the first person, with regard to the working of the Merchandize Marks Acts. He goes on to say "it appears that German silver is known not to be silver. Apparently there is no risk that nickel silver will mislead, as these names are a correct trade description, and also not calculated to mislead. I have issued instructions not to detain articles so labelled. The result of inquiries regarding the sale or traffic in so-called 'aluminum gold,' seems to me to show that there is a risk that this title is likely to mislead buyers into believing that the metal contains at least an element of gold. As the name gold seems to me likely to mislead, I think it advisable that importers should drop the word 'gold,' and use the word 'bronze' instead. It appears to me that the same objection applies to Canadian and other so-called golds. It is my intention, after two months have passed, to hold any articles so styled, to be a breach of the Merchandize Marks Act, and to confiscate them."

As we read these words, we pause and ask if it is possible that the trade of this vast and mighty Empire is at the mercy of such an ill-informed person as this? But how are we to find it out? Individual members cannot go straight to the Imperial Government and demand the meaning of it, but a properly organised trade institution could, and this is only another of those instances which crop up almost weekly, showing the desirability of a good Trade Society. Perhaps at this point we may inform our readers that there are several members of Parliament who are fully aware of this necessity and are willing to do what they can for such an institution, and we hope that before many months are over our heads, it will be an accomplished fact. To think that one's business is in the hands of a man like this is simply revolting to one's common sense. So far as calling a shovel a shovel is concerned, why is nickel silver a more "*correct term*" than aluminum gold? Neither contain the elements mentioned! and as to German silver, our experience with the public has been that there are more people who regard it as a very low quality of silver, than there are those who believe aluminum gold to contain any gold at all. If "aluminum gold" is to go, then all other similar names must go also. Objectively considered, we must say we would rather see the whole lot swept away, and the name applied to any article its actual and scientific definition. A spinel should be a spinel, not a ruby, and when pressed tightly "a species of ruby known as spinel ruby." A spinel ("ruby") is no more a ruby than aluminum gold is the noble metal. The same may be said of Parisian and other "diamonds," Roman and other "pearls." We have heard people in really first class positions in life speak of Roman pearls as being "real although not Oriental"; we have even seen it in print. Let the Board of Trade, whose office it would rather be, sweep away the whole of these in a legal and properly notified manner, but to have one or two substances made the victim of ill-informed officialism, is neither reasonable nor constitutional!

* * *

A new Volume is commenced with the present issue of this journal. A complete index to Vol. XVI. will be published with the August number.

The Advisability of Taking Receipts.

FEW verdicts were probably ever received with more surprise in the trade, especially the West-end section, than that given a fortnight ago in the Court of Queen's Bench against Messrs. Percy Edwards and Co., Piccadilly, W. In this case the plaintiffs sought to recover £207 14s. for goods sold and delivered to Lady Valerie Susie Meux. The defendant admitted the debt, but by way of set-off claimed that she had entrusted the plaintiffs with a pair of pearl drops to dispose of for her, which had not been returned. The pearls in question belonged to a suite bought at Messrs. Hancocks in 1881 for £5,700; at that time drop pearls were fashionable. On this ceasing to be the case, and solitaires being *en tout rage*, Lady Meux sent the drops to Messrs. Edwards to dispose of; this was in 1887. These not meeting with a quick sale, Mr. Barber maintained that, in response to Lady Meux's wish, they were taken by himself to her and delivered back to her personally at Park-lane. The only little piece of evidence that we can see could have had any weight with the jury, was the fact that when first applied to for them, Mr. Barber could not for the moment remember the transaction. In tracing it, however, the whole thing came back to him, in the same manner that such things do return upon closer reflection. When one realizes the nature of the business that Mr. Barber has developed here, the thousands of high-class novelties he has introduced, the amount of thought necessary for such a business, one can easily see how a supposed finished transaction should be relegated to an obscure position in his memory, especially transactions of so ordinary a kind as this, of which there are thousands going on. The ignorance of these facts, perhaps, wholly accounts for the verdict found by the jury, who probably thought this was quite an exceptional circumstance, and one that ought to have as much impression upon the jeweler as the five thousand pound suite did upon them. As is well known, it is quite customary to receive valuables from customers without giving receipts, and also giving them back without receiving one. At the present time there are a few hotels that will sign for the receipt of parcels of jewelry, and there are hundreds of thousands of pounds' worth of goods transmitted without any receipt whatever. Probably these also are facts of which the jury were unaware. We recollect a case of a remarkable red diamond which used to be on exhibit at a West-end house, but whenever the owner wanted it for State occasions, he used to go and get it. We do not remember him ever receiving or giving a receipt for it—and this is only one instance. So far is this leaving goods without a receipt carried, that even wholesale houses often leave goods on appro. with an appro. note. A case of this kind was lately tried in which a North London jeweler refused to pay for a diamond necklace which he had had stolen, on the ground that he had no appro. note with it, and we are not so sure that had not something else transpired which caused the magistrate to go out of his way to censure the jeweler, the latter would have got the best of it. In cases of business men with business men it is one thing, but with aristocracy and tradesmen it is a totally different thing altogether. We have known large and important accounts closed from far simpler things than asking for a receipt, and few who do not have dealings with the aristocracy have any idea of the peculiar views some of them hold regarding what they call honor, and none can help sympathizing with Messrs. Edwards in the verdict which was accorded to Lady Meux for the ascribed value of the pearls, seeing that it is a circumstance with which many could at any day find themselves surrounded. To give further details of the case, and quote our own experience in connection with similar cases, would only be to aggravate the matter, now that the verdict has been given. But we cannot help thinking that as the aristocracy can hardly do without jewelers, it is only for all to agree in not delivering anything without a receipt, offend or please. Without this anyone may some day find himself mulcted in a thousand pounds fine and expenses.

Curious Agates—The Rainbow Stone.

WE have been asked several times of late if we have heard of the rainbow-stone, and if we could give any particulars of it. There was a stone called "iris" by Pliny, which we have always regarded as a hemihedral variety of quartz or calcite. Such a three-sided prism would most easily act as the iris was said to do, viz., cast upon the walls of the chamber the colors of the rainbow when exposed to the sun's rays. Or it need not even have been a hemihedral form, as under proper conditions the light falling upon one upper side face of a holohedral prism would leave the other upper side face suffering dispersion and producing the iris colors. There was another stone which the grand old naturalist called heros (Pliny N. H. xxxvii, 53) that resembled in appearance the iris, but did not exhibit the iris colors, but had a speckled vein running across the crystal. From this, we think it is quite certain that he referred to quartz crystals and to no form of agates, which he so profusely split up under different names.

In the December number of *Science Gossip*, Mr. Marrat, of the Liverpool Free Public Museum, gave the following:

> "The rainbow-stone—this is by no means an attractive looking stone. It is a greyish, translucent ribbon agate, with just sufficient indication of bands to distinguish it from an ordinary chalcedony; it is very thin and translucent. The part of the stone containing the iridescent band, from which it derives its name, and which is the only portion colored, is about half-an-inch broad, and consists of fine navy bluish parallel thread-like lines. The band above the rainbow lines is a section of what was once quartz crystals, and the remainder of the stone below the layer is chalcedony sprinkled with minute red dots. This is the stigmites, or St. Stephen's stone. When the specimen is held obliquely between the eye and a strong sun or gas light, the prismatic colors appear at first of an intense blue or green, in fine wavy lines; then, when turned in the hand, the reds and yellows make their appearance, and shine with equal brilliancy. The stronger the light, the more beautiful the rainbow appears. The stone need not be placed very near to the light, as it can be seen in a room at a yard distant from

a lighted gas. I possess many specimens, both plain and banded, some of which are quite as thin as the specimen described above. These have all the appearance of the rainbow-stone, but none of them show any colors when held up to the light."

Feeling unable from this account to be fully assured there was anything more in this stone than in many in our own collection, we wrote Mr. Marrat for further particulars, or, if possible, a view of it. His reply, although very kind and courteous, really gave no scientific explanation. We can therefore only attempt an explanation of the phenomena from analogy with some of our own. It is not at all difficult, in looking through a few hundred agates, to see quite a number which exhibit these iris colorings to a greater or less degree, owing to the light falling upon one of the crystals of quartz (of which there are many thousands in some agates) which was somewhat separated from the rest, either in its mode of formation, or by subsequent rough usuage; this, then, acts as a prism under ordinary circumstances would do, giving rise to the rainbow colors.

Private Arrangements *versus* Public Bankruptcy.

(By a Birmingham Manufacturer.)

THERE is an instinctive tendency in the average business mind when once a loss is inevitable to settle the matter on the most advantageous terms possible; in homely phrase, "to make the best of a bad job." This philosophic and practical mode of action has much to recommend it. A speedy settlement prevents the waste of that most valuable business commodity—time; and it insures the minimum of worry and anxiety, which too often are far more hurtful in their effect than actual monetary loss. Better know the worst at once, accept the loss as a trading episode, rule off our ledger with the least possible percentage of bad debt, and devote all our energies to renewed efforts in other directions. Some such line of reasoning as the above appears to have prevailed largely in our trade in the past, resulting in that preponderance of private settlements over Court liquidations which has been so noticeable during the last few years. Let us see whether it has been a wise doctrine in the long run.

It is unfortunately too true that passing through the Bankruptcy Court is a long-winded and expensive process. The fees are many and large, and the available assets of an estate are seriously diminished by the time a dividend is declared. Contrast this with the speed and economy of a private arrangement. A balance-sheet (as a rule drawn up by the debtor himself) is presented to the meeting of creditors. From this document it is clearly seen that so much in the £ is the very utmost that the estate can pay. The few largest creditors, fearful of losing more money, "rush" the acceptance of the offered dividend, and the matter is settled at once. The only further difficulty lies in cajoling or bribing the two or three outstanding creditors to sign the deed of arrangement. On the other hand, the extreme publicity of bankruptcy proceedings—especially the severe criticism of official examination—is a very awkward matter for the debtor, and in some cases even for one or two of the creditors. And again the general effect of a bankruptcy is to completely close a business—thus, as the term goes, causing the loss of a customer in addition to an actual loss of money. With a private composition the business is still carried on, giving the creditors, as they fondly hope, a chance of recouping their present loss by a healthy and profitable business in the future. So the idea has gradually gained acceptance that the operations of "the Court" are inimical to the interests of the creditors, and that the best and safest way out of an unfortunate stoppage is to talk the matter over privately, take the largest squeezable composition, and let the unfortunate (?) debtor carry on his trade as before. Nor are we disposed to find fault with this idea, taken simply on its merits in individual instances. We are bound to admit that sometimes the policy of keeping out of the Court is the one to insure the largest dividend.

But in spite of this the time has now come when the trade at large should seriously consider whether this policy has not, on the whole, proved a mistaken one. Glancing back over the last twelve years we see a long and steadily increasing series of misfortunes, which culminated some four years ago in a perfect epidemic of failures, to the consternation and loss of the entire trade. Unfortunately, this crisis was not final, for the stream of insolvencies is still flowing with us, giving to every business man a keen interest in the pages of the *Gazette*, and throwing a halo of suspicion and distrust over every batch of letters. A small percentage only of these failures came into the full publicity of the Court. There are several instances where the same man has failed twice and even three times, each time recommencing to trade immediately his affairs were privately arranged.

I am firmly convinced that this method of procedure, inaugurated years ago, and still to a great extent adhered to, has been nothing better than suicidal. The lenient treatment of a no doubt honest case of bankruptcy was mentally noted by men who found their monetary affairs pressing. The ease with which one man slipped his burden of debt did not escape the attention of others struggling under a similar weight. Failure after failure occurred in succession, and were speedily settled by too acquiescent creditors. The very facility with which these private arrangements were managed served but to spread the fatal contagion.

Speaking too strongly, am I simply drawing upon the imagination in drawing a picture of the bankrupts of to-day? They go about their business with an air of injured innocence—rather pleased than otherwise with the notoriety they are gaining. They offer so much in the £ as though they were conferring a favour on their creditors, and they pay their composition in the belief that they are more sinned against than sinning. Sympathy and condolence is their need, and an extended patronage after settlement is their reward. This sort of thing should not be, but it is a natural consequence of our own former conduct. Had we pursued a different line of action years ago, these strictures would never have been necessary, and the jewelers as a body would have fewer losses to lament. "But," you will ask, "if you condemn what custom has established, what procedure do you recommend for the future?"

First, I would say, abolish private arrangements altogether. Let every single case of insolvency go through the Bankruptcy Court. Let it bear the fullest light of investigation that cold-blooded officialism can possibly throw upon it. No matter what we may lose in the individual instance, we shall undoubtedly save money in the long run by this means. With the *certainty* of such an ordeal before them, shaky firms will so modify their operations as to run no such risk. The surest method of securing payment in full is to give no alternative but the Court with its publicity and its stigma. Further, I would have every instance of fraud, or attempted fraud, prosecuted and punished; and I would call upon the Jewelers' Association to take the onus of this wherever necessary. The mere knowledge that dishonesty must assuredly meet its punishment, will be sufficient to cripple, if not to totally destroy, its existence;

and the clever but unprincipled men around us, finding their occupation gone, will be forced to turn their attention to honest trading. Bankruptcy will only be indulged in as long as it is more profitable than conscientious work.

Finally, what is wanted is the growth of a stalwart and honest public opinion on this subject. Let sickly sentiment be a thing of the past; let the unfortunate bankrupt weep for himself, and not, as now, laugh in his sleeve at the people he has duped. Time was when the Bankruptcy Court was a reproach and a disgrace, and the sooner it is reinvested with these attributes the better for business. Let it be distinctly understood that the man who has paid less than twenty shillings has lost caste—that he has sacrificed his position. Let it be an inflexible determination in every business man never, under any circumstances, to reopen an account with a man who has once failed and paid less than 20s. in the pound.

These, harsh and severe as they seem, are the remedies we suggest. Prevention is better than cure, and it is far better thus to render it hard for a man to fail than after failure to force him against his will to pay you five, ten, or even fifteen shillings for a sovereign.

What the Huntington Cannot Do.

We recently called attention to the extraordinary returns made by the Huntington Mills at work in Nevada, which give so much larger percentage of gold than has ever been capable of being extracted by any other crushing process. In this instance the quartz being free milling, the crusher is able to carry out its work to perfection; but there are other localities where the gold does not occur free, but is associated with metallic sulphides, which require a treatment with which the otherwise remarkable Huntington Mill cannot grapple. Of the latter nature are the remarkable gold deposits of the "Randt," where, owing to imperfect extraction, a large quantity of gold has been left behind in the "tailings." Some three months ago a company was floated to work these tailings by the MacArthur-Forrest process, called the African Gold Recovery Company. All inquiries into the nature of this process illicited no disclosures other than that it was a chemical one. The concern was therefore very much vituperated by the majority of the press. But the results of their operations in several mines have manifested some remarkable facts, notably the great waste of gold which has been going on in the African Gold Fields; for, in treating fifteen hundred tons of tailings for the Sheba Company alone, three thousand ounces of gold were obtained, whilst a further seven hundred and eighty-three tons yielded thirteen hundred and eighty-five ounces. In the limited extent, in which this process has been employed during the last four months, it has added no less than 6,000 ounces of gold to the output of the Randt. We were not surprised to find the re-washing of diamonds *débris* a lucrative employment, but few ever dreamed that the tailings from batteries which have always been an expensive item to dispose of, would ever be elevated to the dignity of a valuable asset to any gold mining company.

It is a well-known fact in the trade that most of the original members of the large West-end jewelers have either long since retired or have joined the majority. In some instances they have seen their successors also retire. Such was the case with the late Mr. Charles Frederick Hancock, of Hendon Hall and New Bond-street, who died a few months ago at the ripe old age of eighty-three, after being grievously afflicted for a considerable time. His will has been sworn under £62,137.

The Crystallography of Gems.

By W. J. Lewis Abbott, F.G.S.

(*Continued from page* 261.)

The Trimetric System—*continued.*

The Natural Forms of Chrysoberyl.

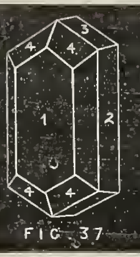


FIG. 37

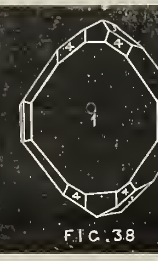


FIG. 38

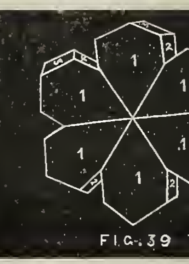


FIG. 39

In describing the forms of topaz, it was necessary to spend some little time detailing the elements and peculiarities of the trimetric system, and to prevent making the article too long we avoided all allusions to hemihedral forms and twinning. With the gem now under consideration, however, we shall be obliged to refer to complications in the system, especially that of twinning. We will first consider the more simple forms, as illustrated in the orange, yellow, and greenish chrysoberyls; they are usually decided prisms with either single or double terminations, the latter being very rare. The simplest one I have ever seen is now before me; it is a prism upon a rectangular base with a low pyramid rising in the same vertical zone. The prismatic faces being those of 1 and 2, Fig. 37, and the pyramidal those of 3 and its opposite in the same figure. This, of course, is simplicity itself, but frequently faces of the rhombic and rectangular prisms are both present, giving rise to an eight-sided prism; and further, I have, or have seen, crystals with faces of three or four different relations to the lateral axes in addition to these. In case, however, it should be thought there is no governing law with these faces, I might remark that the angles all bear a definite and recognised relation to a fixed quantity, which unfortunately cannot be given here, as it would have required a lot of mathematical explanations which I fear my readers would have considered too dry. Turning to the pyramids put on by this gem, they are sometimes those of the octohedron 4, Fig. 37, and sometimes those formed by the union of the brachy and macrodomes simply, or with different relations between the vertical and lateral axes, and consequently going up in steps, as it were. I have never seen a basal pinacoid present. The other two pinacoids which form the prismatic faces are usually very finely striated longitudinally, the one parallel to the macro-diagonal the most so. Other vertical planes are sometimes similarly striated.

Fig. 38 illustrates most of the complexites alluded to; either of the faces can be much more or less developed than shown in this figure, but it shows pretty well all the faces that one is likely to meet with in chrysoberyl, in all its holohedral varieties. A favorite form for Ceylon Alexandrites, and all dark green varieties, is Fig. 37, with the vertical axis not so elongated, so that it presents a hexagonal outline in which the vertical and macrodiagonal axes are about equal in length, and fully twice as long as the brachy-diagonal. But the Alexandrite is not always so simple in its habits; indeed, it usually occurs in those peculiar forms known as twins, an illustration of which is given in Fig. 39, which is perhaps one of its simplest twins. It is made up of three doubly terminated crystals (similar to the one first described) crossing in a center, giving rise to a six-limbed star; or they may be combinations of prismatic and pyramidal faces, adding somewhat to the complexity: or, further, they may be made up of three pairs of twins. Of course all this is of supreme importance in cutting a gem: it would be simply impossible to polish a diamond if so twinned. The silkiness which gives rise to the true cat's-eye makes no difference in the form of crystallization. I have before me a crystal with well-developed faces, some parts of which are quite clear and pellucid and the other quite silky and almost fibrous. I have often noticed the fibrous varieties and larger specimens are more coarsely striated, or even furrowed, and compared with the topaz they are very dull looking. When broken off they show a conchoidal fracture, although not so much so as chrysolite, and no basal cleavage as is the case with the former gem. There is also another peculiarity about these twins that constitute Fig. 39, and that is, that when found they are often detached and single, with the same pegtop outline, caused by the development of the planes of union; or sometimes there are two only joined together by their pegs as it were, looking as though the other limbs of the star had been removed. There is also sometimes that over-development of certain faces that we have alluded to in connection with other gems; more especially is this the case with the pyramidal faces, so that one single face will often monopolize the whole of the termination, giving it a mortice-chisel shape. There is yet another form worthy of notice: in outline it is like a flattened lozenge, it being composed of two pyramids similar to those terminating Fig. 37, only far more acute, meeting at the centre, which only leaves the one prismatic face numbered 1. On the whole there is a tendency to lateral compression in chrysoberyl, which, together with absence of basal pinacoid, are useful in distinguishing it from Olivine, which in many other respects it so nearly approaches.

◆

The Board of Trade has just granted its license to an Association composed of dealers in machines, pianos, furniture, cycles, and other articles which are let out on the hire-purchase system. Its objects are both to protect the trader from the dishonest hirer, and "to ensure for hirers fair and honorable treatment." The Hire-Traders' Protection Association, for such is its name, propose to achieve the latter ends by means of a Board of Arbitration, which will investigate any case of alleged unfair dealing on the part of its members, on the hirer notifying same to the Secretary at its offices, 28, Paternoster-row, E.C., and any offending member is to be promptly expelled. We understand that traders residing in all parts of the United Kingdom have already been enrolled as members, and that to these will be granted a certificate of membership for public exhibition. It will be interesting to note whether this attempt to purify abuses from within the hire trade will lessen the evils of the hire and club systems.

Watch and Clock Making.

(Continued from page 256.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Hermann,

Director of the Polytechnic School of Watch and Clock Making.

(II.)—Advanced Paper, 1880.

QUESTION (3).—At noon in London it is 7 a.m. in New York, and 2 p.m. in St. Petersburg. What is the cause of this circumstance?

Answer.—The cause of the difference of local time between any two positions is due to their difference of longitude. The interval between any two successive transits of the meridian of any point on the globe for any given time is constant, and the difference between solar transit and mean time is the same for any given day for all positions, so that the difference of mean noon of any two positions is equal to the difference of transit. The difference between the transits of any two given positions varies as their longitude. Therefore—

$$180 : \left\{\begin{matrix}\text{east}\\ \text{west}\end{matrix}\right\} \text{longitude} :: 12 : (\pm) \begin{matrix}\text{difference}\\ \text{of time.}\end{matrix}$$

$$\therefore \text{difference of time} = \frac{\text{longitude}}{15}$$

and longitude = 15 × difference of time.

Remarks on this and the following questions will be given in connection with questions (2) and (3) in (III. Honours Paper, 1880).

Question (4).—What advantages are secured by employing epicycloidal teeth in conjunction with leaves that have straight radial faces?

Answer.—On condition that the straight face of the pinion is a tangent to the curve at the point of contact, and therefore at right angles to the normal of the curve at this point; or, what is the same thing, that the center of motion of the straight face coincides with the end of the diameter of the tracing circle, drawn through its point of contact with the pitch circle of the wheel, the advantage secured is a constant moment about the center of pinion, and an angular velocity equal to the velocity that would be obtained, if two discs, whose radii are of the same magnitude as that of the respective pitch circles of wheel and pinion, moved by contact. That is, the advantages are uniform transmission of motive force (work expended on sliding friction being neglected) and uniform lead.

This condition is satisfied in pinions above eleven leaves with circular addendums, and in pinions below that number with epicycloidal addendums, but not with circular roundings. In pinions of six leaves, the conditions specified hold good for a pinion angle of some 43 degrees past the line of centers. But the angular engagement of each leave is $= \frac{360}{6} =$ 60deg; therefore, beyond this measure the action is continued by employing a tooth of a higher addendum, that is a tooth traced out by a generating circle in excess of its right dimensions, viz., one half that of the pitch circle of the pinion, or allowing the contact to commence before the line of centers. In either case the conditions of uniform lead and of equal transmission of motive force are disturbed.

Question (5).—Explain the manner in which the mathematically simple pendulum and the compound or material pendulum are related. How do the oscillations of the former vary with its length?

Answer:—If a particle moves on a cycloid whose base is horizontal and its vertex vertically below it, and the diameter of whose tracing circle is denoted by a, then the time of descent of the particle to the vertex from any point on the cycloid is

$$\pi\left(\frac{a}{2\,g}\right)^{\frac{1}{2}} \quad . \quad . \quad . \quad . \quad (a)$$

and therefore the time of motion from rest to rest is

$$2\,\pi\left(\frac{a}{2\,g}\right)^{\frac{1}{2}} \quad . \quad . \quad . \quad . \quad (b)$$

or

$$\pi\left(\frac{2\,a}{g}\right)^{\frac{1}{2}} \quad . \quad . \quad . \quad . \quad (c)$$

If now the particle is attached to one end of a weightless, flexible, and inextensible string of length $= 2a$, and the other end fixed to a rigid point vertically above the vertex of the cycloid, and in such relation to two solid semi-cycloids that the path described by the end of the string becomes an involute of a cycloid, then the particle will move along the curve of a cycloid, and hence

$$\pi\left(\frac{2\,a}{g}\right)^{\frac{1}{2}} = \pi\left(\frac{L}{g}\right)^{\frac{1}{2}} \quad . \quad . \quad . \quad . \quad (d)$$

where L denotes the length of the string $= 2a$.

When the angular displacement of the particle does not exceed 2deg. on either side of the vertical, its path is sensibly equal to the cycloidal one, and thus the time is given by last equation, with the provision that the mass of the string does not influence the motion of the particle.

This condition is however only satisfied if the string is massless, which is impossible, hence a mathematically simple pendulum is an ideal pendulum.

When, therefore, a particle is connected with a fixed point by a string, or rod, and is oscillating in a vertical arc, it becomes virtually a compound pendulum, because every portion of the string tends to perform an oscillation about that point in a different time than any other. That is, those nearest to the fixed point hasten those further off, and, inversely, those further from the center of motion retard those nearer to it; thus the actual time of motion is a compounded motion, and this constitutes a compound pendulum, and therefore every attempt to construct a simple pendulum becomes practically a compound pendulum, and is only an approximation to the simple pendulum in proportion as the particle becomes a dimensionless heavy point and the string a weightless substance.

The true time in every pendulum where these conditions are not verified is given by

$$\pi\left(\frac{K^2}{h\,g}\right)^{\frac{1}{2}} \quad . \quad . \quad . \quad . \quad (e)$$

where K is the radius of gyration and h the distance of the center of gravity of the pendulum below the center of suspension, hence by (d) and (e)

$$\frac{K^2}{h} = L \quad . \quad . \quad . \quad . \quad (f)$$

and therefore the time of an oscillation varies as the square root of the length of the pendulum. That is, if the length is reduced to one-half, the time will be one-quarter, or conversely, if the time of an oscillation has to be doubled in duration, the pendulum must be four times longer.

Remarks.—The length of a simple pendulum can be approximately found experimentally thus:—Attach one end of a very thin thread to a leaden bullet, and the other to a fixed point, so that the bullet can swing to and fro, then the distance measured from the fixed point to the center of the bullet is, approximately, the length of the simple pendulum; we may call it the practical length of the simple pendulum. To connect such an experiment with the general formula in (d) we proceed thus:—Suppose in a particular case the length of this pendulum was found, or made, to be 42 inches, then representing symbols by numerical values, and the time of a swing or oscillation by t, by the right-hand member of (d)

$$t = 3{\cdot}1416\sqrt{\frac{42}{32\;19 \times 12}} \quad . \quad . \quad . \quad . \quad (g)$$

(for $\left(\frac{L}{g}\right)^{\frac{1}{2}}$ is the same as $\sqrt{\frac{L}{g}}$, for both denote the square root of the fraction).

Dividing 42 by the product of $12g$. we get

$$t = 3{\cdot}1416 \sqrt{{\cdot}108729}$$

extracting square root and multiplying

$$t = 1{\cdot}0359 \text{ seconds.}$$

Since 42 inches are $3\frac{1}{2}$ feet, equation (g) may be written thus

$$t = 3{\cdot}1416\sqrt{\frac{3{\cdot}5}{32\;19}}$$

the answer will come out the same.

It is possible for pendulums of various forms and dimensions to perform their oscillations in the same time, hence evidently there must be something in common between them. Any body oscillating round a horizontal axis, symmetrical with regard to its plane of motion, constitutes a pendulum. Suppose a simple (approximate) pendulum is constructed so that both perform their oscillations in the same time, then the length of the simple pendulum denotes the distance of the center of oscillation from the center of suspension of the material or compound, which is sometimes termed the equivalent simple pendulum. By the property of this center, the pendulum will perform its oscillation in the same time if it is made the center of suspension. See (1) in (III.)

Experimentally the length of the simple equivalent pendulum, or the distance of center of oscillation from center of suspension, may also be found by means of equation (m) in (2). Suppose the body describes 40 oscillations in a minute, then representing symbols by munercial values

$$L = \frac{60^2 \times 32{\cdot}19}{40^2 \times 3{\cdot}1416^2} \quad . \quad . \quad . \quad . \quad (h)$$

$$= \frac{3600 \times 32{\cdot}19}{1600 \times 9{\cdot}8696}$$

$$= 7 \text{ feet } 4 \text{ inches (very nearly).}$$

From equation (h) it follows that in a seconds pendulum

$$\frac{60^2}{60^2} = 1$$

hence

$$L = \frac{32{\cdot}19 \times 12}{9{\cdot}8696}$$

$$= 39{\cdot}138 \quad . \quad . \quad . \quad . \quad (i).$$

The length can also be found by application of the deductions made in the last lines in answer, that is

$$1 : \frac{60}{40} :: \sqrt{39{\cdot}138} : \sqrt{L}$$

$$\text{or } 1^2 : \left(\frac{3}{2}\right)^2 :: 39{\cdot}138 : L$$

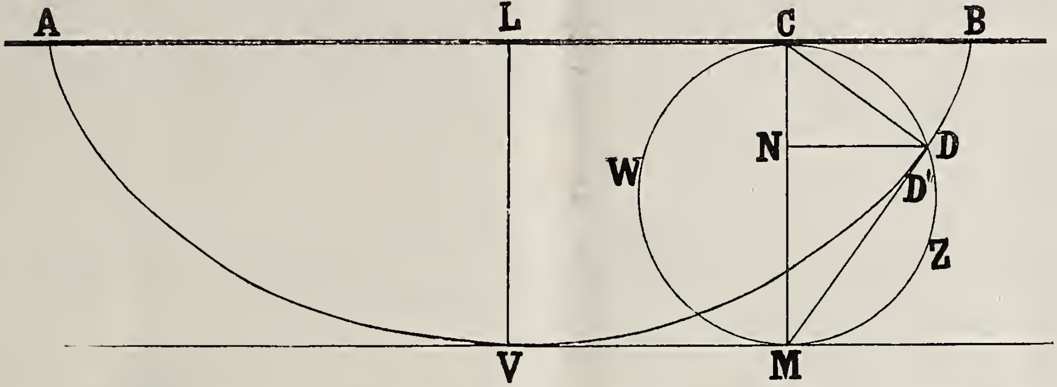
where L denotes again the length of the pendulum, hence

$$L = \frac{9 \times 39{\cdot}138}{4}$$

$$= 7 \text{ feet } 4 \text{ inches.}$$

The length can also be found by calculation, and conversely a compound pendulum of a given equivalent length can be constructed from calculation. This, however, is rather more of an advanced problem, as it involves the principle of moment of inertio and radius of gyration, hence I think it expedient to defer it till further on.

Referring to equation (a) it has been observed that that was deduced from motion on the cycloid. There are various demonstrations of the general formula given in the right-hand member of equation (*d*), but all of them are based on motion in that curve. The cycloid is the most important curve, both by reason of its properties and application in mechanics. In the formula (*a*) there are two principles involved, namely, the time of motion, and, secondly, the isochronism of motion, or, what comes to the same thing, toutochronism of the curve. The latter can be proved by the principle of the isochronism of straight oscillation, which involves the condition that the force towards the neutral point varies as the linear displacement, or it can be proved direct from the property of the curve. To enter into these side issues will hardly perhaps be to the interest of the general reader at this stage, hence again I feel under the necessity of deferring these (with the exception of a demonstration given below) for a more suitable occasion.*



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* Let B D V represent a semi-cycloid, W Z the tracing circle, and C the point of contact of the tracing circle with the base A L B. Let D be a point in the cycloid, corresponding to the position of the tracing point and with the instantaneous describing radius C D. Let D¹ be the position of the tracing point when the tracing circle has moved through an indefinitely small angle d ϕ, then D D¹ being very small

$$DD^1 = CD \,.\, d\phi \quad . \;.\; .\; . \quad (a)$$

(ϕ being in circular measure.) Let a particle move frame rest at B, down the concave side of the curve, then at D its velocity v is

$$= \sqrt{2g \,.\, CN} \quad .\; .\; . \quad (b)$$

hence time of describing D D¹

$$= \frac{DD^1}{\sqrt{2g \,.\, CN}} \quad . \;.\; .\; . \quad (c)$$

Since D D¹ is very small, we may consider its velocity to remain constant. Substitute the value D D¹ in (*a*) for D D¹ in (*c*), then if $d\,t$ denotes the time

$$dt = \frac{CD \,.\, d\phi}{\sqrt{2g \,.\, CN}} \quad . \;.\; .\; . \quad (f)$$

The triangle C D M is in every respect similar to the triangle C D N, therefore

$$\overline{CM} : \overline{CD} :: \overline{CD} :: \overline{CN}$$

$$\text{and } \overline{CD}^2 = \overline{CM} \cdot \overline{CN} \quad . \;.\; .\; . \quad (h)$$

Let a denote radius of tracing circle, thus by (*h*)

$$CD = \sqrt{2a \cdot CN} \quad . \;.\; .\; . \quad (i)$$

Substitute value of C D in (*i*) for C D in (*f*), thus

$$dt = \frac{\sqrt{2a \cdot CN}}{\sqrt{2g \cdot CN}}\, d\phi$$

$$= \sqrt{\frac{a}{g}}\, d\phi \quad . \;.\; .\; . \quad (k)$$

hence, if t denotes the time of motion to the vertex of the cycloid

$$t = \int_0^{\pi} \left(\frac{a}{g}\right)^{\frac{1}{2}} d\phi$$

$$= \left(\frac{a}{g}\right)^{\frac{1}{2}} \int^{\pi} d\phi$$

$$= \pi \left(\frac{a}{g}\right)^{\frac{1}{2}}$$

But this is also the time of rising, hence time of one oscillation or motion from rest to rest

$$= 2\pi \left(\frac{a}{g}\right)^{\frac{1}{2}}$$

$$= \pi \left(\frac{4a}{g}\right)^{\frac{1}{2}}$$

but $4\,a = L =$ the length of the equivalent simple pendulum, hence the time is

$$\pi \left(\frac{L}{g}\right)^{\frac{1}{2}}$$

The Diamond Fields.

(BY VAALITE.)

THE time since you published my last letter has probably been covered by one of the most remarkable and exciting episodes in the history of the South African diamond fields. I cannot repeat at length the various items that I have sent you, which you could not find room to print. I wish they had appeared as they were written, as it would have given your readers a better idea of the different phases assumed at various points in our late struggles. The bone of principal contention is, as you are aware, the Wesselton Mine. To make the position intelligible, I suppose it will be best that I should give you some outline of this very complicated case. The whole thing turns on a question of Mining laws. Now, under Colonial law, all minerals and precious stones are the property of the government, and can only be given out to prospectors by public proclamation. Under Free State law, however, the case is very different, for there they are the property of the owner of the soil. Now, the farm upon which the Wesselton Diamond Mine is situated, and which enjoys the name of Benaudheidfontein—which means anxiety fountain—was granted under a Free State title, so that the mine is in reality at the disposal of the owner of the farm; nor can even the government under the present law proclaim it a public diggings without first getting the consent of the owner. In its early stages the question which was most prominent was what would be the action of De Beers in reference to it. It was hoped that the Premier, who was then on the water, would take decided steps in the matter as soon as he arrived. But in the meantime the people at Beaconsfield, close by, were very anxious that it should be thrown open as a public mine, especially the "Labor Bureau," an institution which sprung into existence to provide work for the destitute and unemployed. It was probably, in consequence of what transpired at one of these meetings, that the mine was rushed. Advocates for this action were sent to stump the country all round and preach up sympathy with the unemployed, and the necessity of having the mine proclaimed. Circumstances in the meantime were by no means becoming more simple, as Mr. Wessel was away at the Cape, and Messrs. Marais and Ward had gone to him to settle upon the course they intended to take. At this time there was another claimant, a Mr. Eland, who advertised in the local papers that he was entitled to one-fourth share in the concession held by Mr. Ward from Mr. Wessel, and that he would not hold himself bound by anything said or done by the said Mr. Ward, without the latter had first obtained his consent. This Mr. Ward very quickly denied, and closed him up. In the meantime Mr. Marais, on behalf of Mr. Wessel, had given notice that unless the pegs were withdrawn and the tents immediately removed the rushers would be treated as trespassers. Then came another claimant forward, whose claim is rather of a complicated nature and one that is not perhaps so easily disposed of, and yet again another claimant. You can well imagine how all these circumstances, together with many others that I have not attempted to mention, such as for instance, these claimants being large De Beers shareholders, and that the new Mine would naturally drift into the hands of the De Beers, should have rendered things the most complicated and disturbed. The peggees in the meantime finding such results as to stimulate them to get possession of the mine at all costs and hazards. While all this has been going on, people have got to disbelieve in the ridiculous assertion made by Mr. Cecil Rhodes when he was amalgamating their company, that there were not likely to be any more paying diamond mines found, and accordingly quite a number of interesting discoveries have been made, amongst which we might mention those on the Vaal River; for example, one of Mr. Cyrus, whose finds were of such a nature that seven hundred claims have been applied for. Nor is this alone, but two or three others, of the further particulars of which I will write another time, have been brought forward. Of course, during all this commotion, the vicissitudes of the big De Beers Company have not been altogether pleasing, but have put on several complications about which I cannot tell you this time. In March the price of rough had materially fallen; in April, however, they had risen again; but I am of the opinion that it cannot fail to have an effect upon the De Beers Company, and I expect you will see this confirmed by keeping your eye on the share list. Every day confirms the richness of this mine, and more rushing has gone on, as the people think that possession is nine points of the law; and how they will be got off it is still difficult to say, as even the law may be disregarded when the peggees are so largely supported. At this point Mr. Wessel began to ask the assistance of law to get them off, and accordingly summoned the ringleaders, Messrs. T. H. Wilson and Owen Hall, for trespass. The case commenced in the High Court of Justice, but one cannot help reading between the lines of the protracted trial the same dilly-dallying that has characterised the action of the government all through the piece, and which is doubtless to blame for the long disturbed and unsettled state of affairs; and the verdict given by the Court was little more decisive, simply granting an interim interdict pending an action in the Supreme Court. But when before the Supreme Court, "the appeal" was dismissed with costs. Such is the unsettled state in which we find ourselves at the time of my posting this letter. It will now probably be turned to a political question, and should members of the Opposition take sides with the rushers and the powerful body of sympathisers at the back of them, the government will have a difficult time of it, and many prophecy not only a fall of the government, but a break up of the De Beers monopoly.

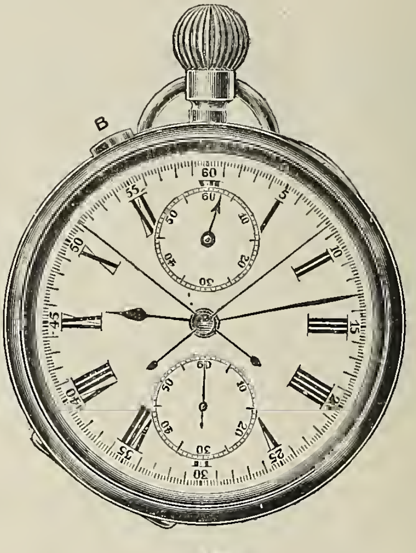
* * *

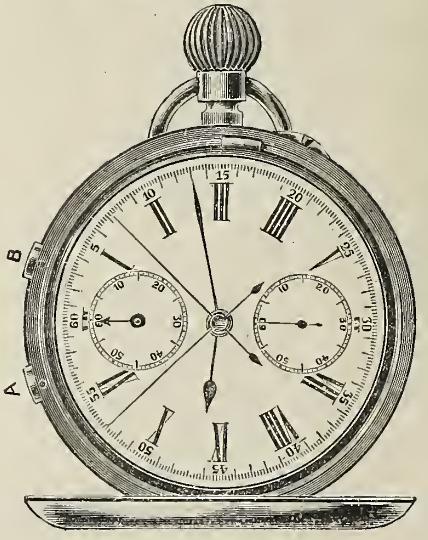
Our Birmingham correspondent reports that several Australian buyers are now in the city, and that a few dealers from America are expected in the course of the present month.

In the manufacture of watch-glasses, an able workman is said to be able to cut 6,000 a day.

New Action in Split Seconds Chronographs.

WHENEVER Foreign Royalty visit this country, if nothing else will charm them, complicated watches will. It is very interesting to watch some of them, how awe inspired they become as they inspect these remarkable evolutions of horological skill. But yet it is not to be wondered at, when we realize what a number of the very finest intellects that have ever acted, have unceasingly had the one great object before them which has resulted in the ordinary split center seconds chronograph. Therefore, to make any improvement upon it, even if only a small one, is a great achievement and honor; but the improvement which has lately been introduced by Messrs. Baume is a very great and important one. Those who have had most practical use with the chronograph will be the first to appreciate its advantages. Although simplicity itself, we have thought it best to give an illustration of it, and some little detailed explanations.





Two blocks are given, one illustrating the open face worked from the pendant and stud, the other a hunter worked by two studs.

Imagining the hands to stand at zero, the first pressure upon the main push-piece (A) will cause the two chronograph second-hands to start travelling together (as though they were one). The first pressure upon the supplemental push-piece (B) will "split" the seconds, causing one hand to stop, leaving the other still travelling; the second pressure on the main push-piece will stop the other hand. But now comes its importance! Another pressure of the main push-piece will cause the return of BOTH hands to zero! It thus obviates what now has to be done, viz., using the second stud to bring both hands back to zero. Few people realize the skill required to time a race correctly; the furore and excitement by which a timer is surrounded cannot fail to have at least some effect upon him, and often, as we have known, cause him to leave one hand stationary.

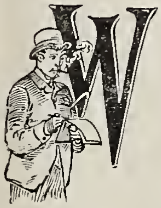
We therefore consider this one of the most useful additions that has been made to the split seconds chronograph, and should think, in the future, none will ever be made without it.

Meteorological Observations.

On Saturday, June 6th, the reports of the meteorological phenomena, as made at the Royal Observatory, were submitted to the Board of Visitors. The additions to the building and instruments having been detailed, the report went on to say that in the year ending May 10th, about 6,000 observations of Right Ascension and North Polar Distance were made. During 1890 photographs of the sun were taken at Greenwich on 209 days, and, with those taken in India and Mauritius, the series is complete for 361 days of the 365. The sun was free from spots on 175 days, as compared with 211 in 1889. Melbourne photographs are being measured to fill gaps in the series 1875-91.

The mean temperature was 48·6deg., being 0·6deg. below the average of the preceding forty-nine years. The highest air temperature in the shade was 82·8deg. on August 5, and the lowest 13·1deg. on March 4. The latter is the lowest temperature registered in March since 1841, being the same as that recorded in 1845, March 13. The mean monthly temperature was below the average in all months except January, March, May, and September. In December it was below the average by 10·0deg., and in January above 5·2deg. The mean daily motion of the air was 272 miles, being 10 miles below the average of the preceding 23 years. The greatest daily motion was 837 miles on January 26, and the least 32 miles on August 6. The greatest pressure registered was 14·5lb. on the square foot on January 26. The number of hours of bright sunshine recorded was 1,255, which is about 35 hours below the average of the preceding 13 years. The aggregate number of hours during which the sun was above the horizon was 4,454, so that the mean proportion of sunshine for the year was 0·282, constant sunshine being represented by 1. The rainfall was 21·9in., being 2·7in. below the average of the preceding 49 years. The winter of 1890-91 was remarkable for a long period of exceptionally cold weather, which commenced on November 25. From this day till January 22 the mean temperature on every day except January 13 was below the average. The temperature was continuously below 32deg. on November 27, 28, December 10 to 19, 22, 23, 25, 28 to 30, January 2, 6 to 8, 10, 11, 17 to 19. The greatest defects from the average of 20 years were on November 28 (19·1deg.), December 22 (20·7deg.), and January 10 (19·3deg.). The lowest temperatures recorded during the three months were 18·3deg. on November 28, 13·4deg. on December 22, and 12·0deg. on January 10. The mean temperature of December was 22·8deg. or 10·0deg. below the average of the preceding 49 years, the coldest December on record since 1841 previous to 1890 being that of 1879, whose mean temperature was 32·4deg. In 1890, December, only 2·4h. of sunshine were recorded. On 363 days the time signal was accurately sent to the Post Office and the time-ball dropped. The ball at Deal was not dropped on 18 days owing to failure of telegraphic connections or high wind. The signals sent to Greenwich to determine the error of the Westminster clock and that used for the time-ball at Devonport show that on 71 per cent. of the days of observation the error of the former was only 1sec., and on no occasion more than 4sec., while the latter was 1sec. out on one day only. Looking to the future the Astronomer Royal urges the re-determination of the longitude of Paris, and the provision of buildings befitting the position of the Observatory as a permanent institution.

Notes About Town.



WHATEVER may be the state of trade with the Sheffield and Birmingham manufacturers, or even with the large London manufacturers who depend upon outer London and the country for their business, it is certain that jewelers in the West-end had a very bad month for June. More than one has observed to us that it was more like February than June, especially in the fore parts of the month. With the insetting of the fine weather trade began to brighten, and many are now making up for lost time.

* * *

Messrs. Tiffany's New Store. In the quiet secluded locality of Argyle-place, have existed for a long time the offices of Messrs. Tiffany, the great American jewelers. Here, unknown to the majority of retailers, they have from time to time been visited by the largest wholesale houses and diamond merchants, from whose stocks have been selected the things which they considered most suitable for the American market. From such a state of things jewelers had nothing to fear, as practically no retail business was done, and, although Americans visiting this country often inquired after Tiffany's store, no one could direct them to it. Now, however, things are changed, and the American store is now located in Regent-street, where a retail trade will be carried on. We think the trade do not at present realize what a difference that will make to many houses, especially those who do business with Americans, as our cousins think such an almighty lot of Tiffany.

* * *

Enamel and Pearl Chains. LONG guards, gent's alberts, and necklets composed of long pillars of transparent red or blue enamel, with small white spots, separated by pearls, are now being worn. Similar gold ones without the enamel are also being used.

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Avanturine to the Front. THERE is the same special feature in the shamrock that exists in the horseshoe, and that is its symmetry; in virtue of this they lend themselves to such a multitude of designs, which, possibly, more accounts for their being such favorites, than any sentimental feelings or talismanic beliefs on the part of the wearers. We are very pleased to see that the green chalcedony, used during the last two seasons with such quiet grace and good effect, has led up to green avanturine or amazon stone being employed for this purpose. For, whereas the unpolished surface of the former had a desirable contrast with the diamonds usually associated with it, the avanturine has qualities of its own, especially those caused by the minute silvery spangles that permiate it, which cause it in some lights to appear as if covered with dew.

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Long Guards Again. The revived old long guards of fine chain, separated by pearls and other gems every few inches, are being asked for in the West, and some firms are making them up.

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Ordinary Stars Superseded. The rising sun, or half star, has grown in popularity for many reasons. Firstly, it is unquestionably very effective and handsome, and, secondly, it makes the best show at the price of any diamond ornament, being only about half the price of a star the same size. The rays or limbs are either straight and tapering, curved, zigzag, or conventionalized after the desire of one's own heart. Alternate limbs of rubies or colored diamonds are added with charming effect. Sometimes the center stone is a very large one, or made to appear larger by a row of small ones. Occasionally a yellow sapphire, or some other fancy gem, cut round in outline, is introduced with grand results.

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Revival of Holbein. The impetus given to high art enamelling by the introduction of enamelled orchids has turned the attention to the Holbein's once more, and we now see enamels and colored stones used together with charming effect. We have no doubt they will become popular, especially now that public notice has been attracted towards colored gems. This will give some of the old firms an opportunity to re-kindle the smouldering fire that was burning brilliantly years ago. We have recently seen a large number of these designs, and hope to devote some good space to them

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Pear-shapes and Drops Again. After a period of somewhat quiet repose, drop or pear-shape stones are coming forward again, especially in larger diamond ornaments; but they usually assume a swinging form. This may be the thin end of the wedge of the return to the classic or conventional designs, after the reign of flowers, *au naturel*. Be that as it may, we can say with satisfaction and pride, that the appeals to nature for designs in diamond work have resulted in the finest examples ever produced, and we hope that many of them will be handed down to posterity as examples of Victorian art.

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Important Collection Sold. On the 10th and 11th of June were sold the first portion of the interesting and valuable collection of minerals of Col. Rimington. The collection was one of the largest and best in the country. Amongst those of more especial interest to our readers might be mentioned several very perfect crystals of diamonds, especially a large rhombic dodecahedron from Brazil; there was also a very interesting small cube. The Kimberley octohedron in matrix was represented, as was the modified dodecahedron in the Cascalhao (or ferruginous gravel) of Brazil. Neither of these realized their trade value for cutting purposes, let alone for perfection of form.

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The Elements of Value. It would doubtless seem a little anomalous to members of the trade to see a good clear diamond of fair color sell for 50s. a carat, and a little bit of tin about an inch long realize £15, or a mass of what he would call iron rust sell for £20, yet such were some of the facts of this sale. The mineral collector is regardless of the value usually set upon things by the outside world; to him perfection of form and rarity are dominant factors in determining prices.

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Euclase Sought After. From these it follows that the Euclase, a gem of some beauty, but still greater rarity, is rising greatly in price and value; one that we should have considered very poor in color — hardly any color at all in fact—realized about £10, and a gentleman who had come from Germany to buy it observed that he would have given £30 for it if it had been a good color.

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Dispersion of fine Specimens. There was a fine Alexandrite crystal, nearly two inches in diameter, which realized about £10. Other gems, such as chrysoberyls, yellow sapphires, very fine topazes, etc., brought much less than their trade value. Altogether there were a number of the finest specimens of things known, in the obtaining of which we were pleased to be able to share.

Sheffield Notes.

(By our own Correspondent.)[*]

NOT a few towns throughout the country have been disagreeably surprised by the publication of the census returns. To say nothing of Liverpool, whose decrease of 105,000 is not believed in by its inhabitants and will probably be the subject of a scrutiny—not a few places have unexpectedly found the balance on the wrong side. It is satisfactory to note, therefore, that the rate of increase in Sheffield, although not so great as in the previous decade, is still indicative of continued commercial prosperity. We number now something like 360,000 souls, and we live in a town which, in spite of its smoke, is one of the healthiest in the country. No figures are yet to hand showing the relative increase of the different branches of trade, but judging from appearances one would say that the silver trade has had its full share of the general increase. To those whose business took them much about the town, the amount of re-building and enlargement of factories in the silver and electro-plate trade must have been especially obvious.

TALKING about extensions reminds me that the façade of Mappin and Webb's new show-room in Norfolk-street is taking definite shape. The row of handsome granite pillars on the ground floor, with panels of the same material above, is much admired by the passers by. The front of the second floor, which is just beginning to show itself, is evidently going to be of red brick, with stone mouldings. The whole of the work is being executed in the very best style, and if the portion now visible be a fair specimen of the frontage when completed, the building will be an acceptable addition to the architecture of this part of the town.

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[*] We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

SILVERSMITHS generally profess to be perfectly satisfied with the present condition of trade. There is every indication of factories being fully employed up to September, when orders for the Christmas trade begin to come in, and trade is expected to be brisk as a matter of course. The struggle for existence in the trade just now results in a great variety of beautiful designs being produced. In point of fact, there never was a time when the standard of excellence in the artistic treatment of silver and electro-plated goods was so high as it is at present.

ONE notable fact in connection with the trade as it exists at present is the proportion of sterling silver made up as compared with, say, five years ago. I was talking with an old silversmith the other day, and he told me that where he made up one ounce of silver five years ago he makes up a hundred to-day. It is probably an exceptional case, as this proportion would not hold good throughout the trade, but it is certain that the public who buy are becoming wise in their generation, and are recognizing the fact that there is more likelihood of their getting full value for their money when buying goods in sterling silver than when purchasing plated goods.

MANUFACTURERS in the steel trade do not by any means express the same amount of satisfaction as their brethren in the silver trade. Between Baring Brothers and the colliers, to say nothing of the McKinley tariff, they are having rather a bad time of it. The latter are in a fair way to success in their efforts to kill the proverbial goose. When that consummation is effected there will certainly be geese enough left, but they will not lay golden eggs. There are, however, branches of the steel trade which are very busy. Away in the east-end of the town, which has now become a huge arsenal, the great works are engaged night and day in the manipulation of armour plates and the forging of guns. The work on hand and in prospect is expected to keep them fully employed for a year or eighteen months.

THE rejection of the Sheffield Company's Bill for a new route to London is both a surprise and a disappointment to business men. Although the heavy trades have naturally a greater interest in the matter than anyone else, yet, as I explained once before, silversmiths have a grievance peculiar to themselves connected with the carriage of patterns to and from the town. It is felt that this state of things would stand a better chance of being remedied were there another candidate for their suffrages in the shape of a new railway to London. However, it is not likely that the matter will be allowed to rest, and the next session of Parliament will probably see the Bill through.

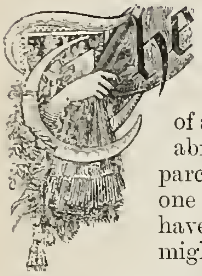
THE outskirts of the borough of Rotherham are distant about a mile and a half from the eastern limits of Sheffield; consequently, although it boasts a higher antiquity than that to which we can lay claim, we regard it as a suburb of our own. The forthcoming visit of the Prince of Wales to formally open Clifton Park is, therefore, fairly entitled to mention in these Notes. It does not appear to be in contemplation to confer the Freedom of the Borough on his Royal Highness—perhaps it is not usual to do so in the case of personages so exalted as the Prince of Wales—perhaps Rotherham has no Freedom to bestow. The usual silver casket, however, will still be presented, only instead of containing the Burgess Ticket it will contain the address to be presented by the Corporation. The usual order of things, therefore, will be reversed, and the casket will be of infinitely greater value than its contents. Although the name of a Rotherham tradesman is attached to the work, it would probably be executed in Sheffield. There is, nevertheless, talent enough in Rotherham to design a work of this character, and there are indications in the style of the very beautiful ornamentation with which the casket is covered, bearing out the theory that such has actually been done.

THE announcement that the Master Cutler is issuing invitations to the "Forfeit Feast"—which, however, must not be confounded with the great "Feast" later on—reminds us that the season is advancing. We have so recently discarded overcoats that we hardly realize that we are in the midst of summer. Mr. Calver so far has discharged more than his share of the public duties which, apart from the functions properly attached to his office, usually devolve upon the Master Cutler. The illness and domestic affliction which, during great part of his term of office, has been the lot of the Mayor, has rendered the demands upon the time of the Master Cutler proportionately heavier. But the summer season brings a much needed rest from work of this kind. For the matter of that, work of any kind "goes down" badly with such weather as we are now having. The number of business men who find that it is absolutely necessary for them to get away to the seaside to repair the damages inflicted on their constitutions by the influenza is quite remarkable.

MESSRS. ATKIN BROS., of Truro Works, who seem to have suffered severely from the ravages of the influenza in some of their departments, are now getting their staff at work in full numbers, and as many more good men as they can command. Their London branch has been at its wits ends to make the unsympathetic business men to whom they are bought in contact, to realize the unfortunate circumstances by which they have been surrounded. However, they have now well wiped off the long outstanding orders, and with that alacrity with which they compete with those extensive orders they occasionally get, they are not only meeting current demands, but are bringing out novelties of high-class goods. Amongst the things that have been very much asked for in the trade, we might mention the artistic card tazzas they have recently been engaged upon, in Copeland, Wedgewood and Doulton; we consider the coloring and treatment of these, coupled with the good mounting, resulted in some of the most artistic productions we have had the pleasure of handling. Their main attention, however, is now directed upon seasonable novelties, and in these this year they do not appear in any way behind, compared with their extensive exhibits of former years. We also hear on good authority that ever since they layed down the extensive plant for the spoon and fork trade, that department has been continually increasing.

THE establishment of Messrs. John Round and Son (Limited), at the present time would make one think there has been no such thing as influenza, but that all their workpeople have been engaged in bringing out something new and useful, especially for the present season. The few extremely hot days we have had makes one feel charmed at the sight of their crystal table fountain, throwing up for hours the clear, fragrant, cool water. This is a most effective show specimen to be in anyone's stock; while any banquet table in the land would be graced by its presence, it being about forty-five inches high, and composed of electro-plate and fine cut glass, with receptacles for flowers, etc. Other articles for the table are represented by numerous novelties in sugar and creams, salads, etc., nd dessert cases with new combinations. Their new atterns in dinner services ought to be seen, especially new fluted one, in which tea and coffee sets are also made *en suite*. Refreshment stands have also received many very elaborate additions, and most of all, perhaps, from an artistic point of veiw, the dessert stands, which naturally lend themselves to such a diversity of treatment.

Birmingham Notes.



THE GENERAL reports of trade, especially at the first part of the month, were of a very discouraging nature. At home things were very dull owing to the extension of arctic winter till after Whitsuntide; while abroad many of the places to which large parcels are shipped are all suffering from one cause or the other, so that the orders have not come in, in anything like what might be expected.

ALL those houses who are chiefly employed on good London work appear to have suffered the most. One jobber informed me that one London house for which he does some particular kinds of jobbing work, and which usually pay him an average of £50 a month, have not had £5 of work during June. Still, for all this, nearly every one seems busy, and all appear to be running good time. The result of this will probably be the production of a number of novelties, which will be in the market in good time for the Christmas trade.

THERE is a considerable stir amongst a section of the trade, owing to a circular which has been issued by the Indian Inland Revenue Department, to the effect that all the various so-called golds, such as "aluminum," "Canadian," "Abyssinian" and the like, will be stopped by the Customs authorities, as being a breach of the Merchandize Marks Act. The great peculiarity of this to me seems that nobody appears to realize the limit of this proclamation, even if it should be enforced. They are all thinking it affects home trade, whereas, as a matter of fact, it can only concern goods sent into Indian ports, and, probably, not all of them. The question as to whether it ought to be legal to call one alloy nickel-silver when it contains neither of those metals, or German silver when it contains not a scrap of silver, or another aluminum gold when it is similarly destitute of either of the metals named, is a question which ought to have been settled long enough ago, and was not a subject in the minds of the framers of the Merchandize Marks Act. Of course, if the Board of Trade likes to use the Act for this purpose, that is another thing; but in looking over the Act I cannot see how it well can, as it applies to (Sec. 2) false trade descriptions. The question which would then arise appears to me to be whether nickel and German silvers are not trade descriptions. It is true that in subsequent definitions "trade description" is said to mean "as to the material of which any goods are composed." But it would be argued that a trade description is the name by which it is described in the trade, and, as such, does not relate to either place where made, or the material of which it is composed. For instance, a cylinder watch of a certain make is known as a Geneva, whether made in Geneva or any other part of Switzerland, or even any other place in the whole world; and aluminum gold is known all over the world as a trade description of an alloy which does not contain a particle of the precious metal.

MESSRS. G. W. HARVEY AND CO., of 26, Frederick-street, Birmingham, seemed to be thoroughly impressed with the fact that there was yet room for improvement in the means at present employed for the fastening of brooches. They launch upon the trade a patent of an unique character, as shown on another page, called the "Invicta" brooch, which we consider is destined to receive full favour at the hands of both wearers and sellers. As we have noted before in our columns in regard to brooches, there is plenty of room for improvement upon the present mode of fastening, and it seems that our opinions are paralleled and endorsed by firms who have come forward recently with things of that description. It is a *sine qua non* that the latest invention should be accepted, or at any rate, is expected to be an improvement upon what has appeared before. Any way, the inventor of the recent article has the advantage of being able to apply and make subservient to his design the inventive powers of those who have preceded him, so that in the ordinary course of things it might be taken as a logical deduction that the latest should be the best. But as we are not wearers of brooches ourselves, it is only our province to draw the attention of the trade to what may be considered a really good thing, and to suggest the propriety of making themselves practically acquainted with the nature of the article in question.

The Coventry Watch Movement Manufactory Company, Limited.

THE annual meeting of the above Company was held on June 3rd, at their works, Spon-street, Coventry, Mr. Samuel Yeomans in the chair. The Secretary, Mr. E. F. Peirson, read the annual report to March 31st, from which we take the following:

The directors regret to have again to report a loss, but feel that having regard to the special circumstances under which the working has been conducted, a different result could hardly be expected. It is well-known that even in ordinary cases the commencement and building up of a business involves waste and loss.

The new machines referred to in the previous report, and which have since been put down, have fully answered the directors' expectations, but they have not been in use for a sufficient time to have any very appreciable effect upon the trading, although, as a matter of fact, the loss during the past six months has been less than that of the first half of the year.

Working on the old system, the quality of the movements was found to be unreliable, but alterations have now been effected which will prevent a recurrence or cause for complaint, and the movements now supplied may be relied upon as being thoroughly sound and serviceable.

The directors look forward to the future with confidence, being of an opinion that satisfactory results will accrue as soon as they have a sufficient quantity of the new plant, and to this end they invite the hearty co-operation of the shareholders in obtaining further capital.

The directors deplore the death of Mr. I. J. T. Newsome, who was a member of the board from the formation of the company, and are glad to state that Mr. John Ashworth, of Manchester, has accepted the invitation to fill the vacancy thus created.

The retiring directors are Messrs. Rowland Hill and Charles Read, who, being eligible, offer themselves for re-election.

The trading account disclosed a loss on the year of £344 6s. 5d.

The Secretary read a letter from Mr. Rowland, apologising for non-attendance, and adding: "I trust that the present shareholders and those members of the watch trade who are not shareholders will, by taking a good number of the preference shares up, so rally round the undertaking as to materially assist us in making a great success of it."

Mr. E. T. Peirson (the company's auditor) also wrote apologising for non-attendance, and said it only required united action to make the company a success, and to show his confidence in the concern, signified his willingness to take up £50 of the new shares if the scheme was taken up heartily by the present shareholders.

The Chairman, in moving the adoption of the report, said it was a disappointment that £344 had been lost on the year's trading, but yet he was not discouraged. The small amount of capital placed at the directors' disposal at the start had been a misfortune right through, and 18 months elapsed before the company had a real hold on the business. But during the last six months the output had considerably increased, though instead of making £2,000 worth of movements a year they really ought to be selling £5,000 or £6,000 worth. The needs of the company were more capital and the orders of the local trade.

A long discussion succeeded on the working of the factory and the movements turned out. It was admitted that the company had not been able to supply certain movements, and had concentrated their efforts on perfecting the frame. Messrs. Flowers and Bales asked questions, and Mr. Denny and other directors made explanations. The main points kept before the meeting were these—£30,000 worth of movements are sold each year; of that the company has had but £2,000, and it ought to have a third of the total. Unless other shares are taken up, the company would collapse and an immediate advance in the price of movements would follow. Ultimately the report was adopted. Mr. Gandy then moved, and Mr. S. W. Read seconded, the re-election of the retiring directors (Messrs. R. Hill and C. Read), and it was carried. Mr. S. W. Read ascribed the company's difficulty in getting capital two years ago to the fact that at that time Coventry people were "bicycle mad." It was decided to add the £511 2s. 7d. loss on the two years' trading to the formation, goodwill, bonus, and extension account, amount to which the balance-sheet put at £944 10s. 4d., and write off the whole at the rate of one-tenth per annum.

An extraordinary general meeting followed, when it was proposed to issue 1,000 shares of £5 each bearing 6 per cent. cumulative interest.

Our Unwrought Materials.

Hyaline v. Celluloid.

ONE of the greatest objections against celluloid is its inflammable nature. We have known instances of a candle falling upon piano keys, and the whole catch fire; and a lady to have her comb ignite in accidently passing it through the gas flame while at her toilet. We are now informed of the existence of several new compositions which compare favorably with celluloid without being inflammable, at least to any degree. The advantages claimed for an Austrian production called "hyaline" are that it is tenacious, odorless, transparent, and can be easily worked.

New Artificial Ivory.

There is another, the co-invention of two Swiss residing in Paris, which perhaps is the only patent that can lay claim to being called artificial ivory, inasmuch as it alone is composed of chemical elements, which exhibit similar physical properties to the finest old elephant ivory. Some of the latter, such as specific gravity, plasticity, and hardness, can be varied to suit the uses for which it is required; and various alterations of the component alkalies, etc., can be made without detriment to its production. The materials and quantities employed in one form which best represents the finest ivory are: caustic lime, one-hundred parts; water, three-hundred parts; aqueous solution of phosphoric acid, with specific gravity 1·05 to 1·07, seventy-five parts; carbonate of lime, sixteen parts; magnesia, one or two parts; precipitated or hydrated alumina, five parts; albumen, twenty parts; gelatine, fifteen parts. Some little skill is necessary in the mixing; thus the caustic lime is first treated with water sufficient to hydrate it, but before the hydration is complete the phosphoric acid is mixed, during which time carbonate of lime, magnesia, and alumina are added, and then the gelatine and albumen. It is afterwards made into a paste and thoroughly kneaded, and can then be placed in moulds and set to dry under pressure accelerated by heat. After three or four weeks it can be cut, turned and polished in every way similar to ivory. It is susceptible of taking any color desired at an early stage in its manufacture. If what we hear of this is correct, and we see no reason why it should not be, a greater future is before this than for any substitute for ivory yet introduced. The details given, we trust, are sufficient to set others in this country making yet new compositions.

The Name Aluminum to be Shortened.

There are good reasons why all names frequently employed to designate certain articles should be as short as possible, and with our metals in common use, or those with names of long standing, we have but little to complain of; but with all the modernly discovered metals, a desire to maintain a somewhat uniform system of nomenclature has extended their length to three and four syllables; and now that aluminum is coming so much to the front, the question has forced itself forward whether its long name is desirable. Most people who have thought about it, say it is not. Accordingly we hear that a great uniformity of consent exists amongst the engineers and technical journals on the other side to reduce the length of the word aluminum to alium. This meets all wants of the case, retaining sufficient of the original root to be known, and possessing the ending which scientists have long since recognised for an element, while it reduces the length of the word to a minimum.

New Nickel Lodes Discovered.

News has recently reached us of some valuable discoveries of precious metals in South Dakota; also of valuable nickel lodes—one fifteen feet wide yielding three to seven per cent., and another, which possibly may be the same, fully three-quarters of a mile off, probably ninety feet wide. Those who are interested in this valuable metal, and know how scarce it is becoming, compared with the demand, will look upon this with pleasure.

Opals in Origon.

Attention has once more been called to the opals of Morrow, co. Origon. Further discoveries and prospecting point to an outcrop of opal-bearing rock about 300 feet long, much of which is said to be fine in quality, especially the Girassole or fire opal.

Discovery of Native Mercury.

It is very rarely that mercury is found free, native and isolated, but information has reached us from Mr. H. Y. L. Brown, Government geologist, that it has recently been so discovered by him and others in clay, etc., in free globules near the township of Willunga, Australia. In one instance the bed rock is claystone, and kaolinised gneissic schist, with granite veins very much decomposed. The geologist has recommended a company to operate upon the bed rock and prospect for cinnabar (sulphide of mercury), which in all probability will be found if mercury be present in any quantities.

Items of Interest.

SOME interesting correspondence has recently taken place between a London firm and the Treasury Department at Washington, as to whether the representative of the firm could take unmounted and other goods for the purpose of sale into the United States, and give a bond to pay the duty upon any goods sold, or deposit the whole amount of the duty at the Custom House and receive back the balance on the goods taken out of the country. They were informed that, if the representative desired to retain possession of the goods and sell the same, it would be necessary for him to enter them for consumption and pay duty thereon. No duty could be refunded on exportation of goods which did not remain continuously in the Custom House; and no bond given to secure the duties would enable the agent to obtain the goods, except on payment of the duty. Do our American friends intend to kick the cow now the calf is growing?

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New Earring action. ANOTHER patent has been taken out in America for ear wires. It is one of the best we have heard of, rendering tilting absolutely impossible. It resembles the well-known American lock swing drop; only instead of the hook which catches the wire being at the bottom end of the wire (behind the collet) it is replaced by a vertical tube, through which passes a bar or a small stop knob on the top and a transverse hook at the bottom. By drawing down the hook, the back passage is quite free for the passing through of the lobe of the ear. When returned into position the upper part and knob comes against the back or lobe of the ear, preventing tilting, and the hook or eye grips and locks the wire.

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Spirits rendered Visible. THE perfection to which modern optical instruments can be carried was thought to be exemplified by the objective made by Tolles, of Boston, which magnified 7,500 diameters, thereby rendering visible many things which the most perfect instrument failed to reveal. But this is entirely eclipsed by a Frenchman, who recently published an account of an optical apparatus by which he could see the spirit (or *le corps fluidique*) leave a dying man; the language in which he describes the revelations made by this instrument is as eloquent as it is absurd. "A delicate column of violet vapour, condensed into a flocculent mass, was clearly seen above and around the body. Particles appeared to pursue one another as if obedient to some kind of central attraction. The cloud condensed more and more, and took the vaprous form of a man, then rapidly became purified, until it was colorless as the most perfect crystal." ! ! !

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Value of Coins. OTHER people beside bondholders are aware of the fact that the value of a thing is the money it will bring, as evinced by the sale of coins at Messrs. Sotheby's on the 1st June, and shown by the following:—Gold.—George IV. pattern £5 piece, 1826, by Wyon, £11 5s. Several Victoria Jubilee £5 and £2 pieces, 1887, were offered, but no bid was made equal to face value, and they were consequently withdrawn. Elizabeth sovereign, £10; Elizabeth royal, £18 10s.; James I. 30s. piece, £10; George II. pattern two guinea piece, young head, 1733, usual type with plain edge, £11; George II. pattern guinea, 1727, plain edge, £19; George III. pattern guinea, 1813, by Wyon, £12 12s.; George III. pattern "standard" guinea, 1813, by T. Wyon, £21 5s.: George III. pattern guinea, 1813, £17; George III. pattern sovereign, 1816, by T. Wyon, £22 5s.; George III. £2 piece, 1820, by Pistrucci, 15 guineas; silver Victoria pattern crown, 1845, £12; Victoria pattern florins, 1848, four varieties, £14; another set of four varieties, £15 8s.; and another set, £20. Miscellaneous Medals.—Manteau Van Dalem, engineer-in-chief of the Parliamentary forces, 1647, by Abraham Simon, £28 10s.; Sir James Harrington, major-general in the Parliamentary army, £23 10s.; Sir John Hotham, by T. Simon, £25. Silver.—William Rufus penny, £4 10s.; Eustace, Governor of York, penny, rare, £24; another, slightly broken on edge, 13 guineas; Stephen and Matilda penny, rare, £28; Henry VII. shilling, £28; Elizabeth portcullis dollar, £7: James I. half-crown, second coinage, seven guineas; Charles I. Tower crown, £13 10s.; Charles I. Exeter half-crown, £9 5s.; shilling, first coinage, perfect condition, £30 10s.; Scarborough siege piece for three shillings, type of castle, octagonal shape, unpublished, rare, £41; Scarborough siege piece for two shillings and fourpence, square, unpublished, £31; Charles II. half-crown, small bust, 1663, equal to a proof, £28 10s.: Ciolwlf penny, five guineas; Aulaf, King of Northumbria, penny, £6 15s.

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Hashed for the Trade. As instances of the disgusting rubbish copied into trade journals we might quote the following from two just to hand: "Did you know that pearls get sick? " asked a well-known Atlanta jeweler yesterday. "They do, and like babies, they require a change of climate when their health is bad, or else they crumble or die. I know of a case once where a lady went into a jeweler's with a magnificent set of pearls that were losing their lustre and beginning to look dead." "These pearls are sick," said the jeweler, upon examining them, "and unless you take or send them to a decidedly different climate at once they will become worthless." "They were sent off, and within a month were as bright and pretty again as they had ever been." In another, describing the process of diamond cutting, it is said the bad shaped pieces are chipped off with chisel and mallet ! !

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Fifty Wedding-ring Mottos. AMONGST the mottos which we have known engraved inside wedding rings are the following fifty:—"United until death," "United for ever," "Pledge of love," "Yours for life," "I am thine," "A token of eternal love," "Undo it who can," "Love conquers all," "Happiness (is) gained by love," "I devote my life to thee," "Love by God's will I shall," "Two united in one," "Where there is love there is happiness," "This is the bond of love," "From love springs all our hope," "In this sign is my hope," "I will never forget," "Not the voice but the vow," "Now and for ever," "Yours till death us part," "Take me as I am," "Let this ring always cling to thee," "I shall never forget," "God decreed, and we agreed," "Part us who can," "By this we conquer all," "Here ends all flirting," "Good bye all else," "U & I R 1," "U & I for ever," "U & I together love," "This lock knows no key," "My joys all spring for thee," "The knot that binds," "By love we live," "Love and forgive," "Despise all else," "May this break with my vow," "Faithful ever," "Wholly thine," "What this joins none shall sever," "I am thine and thou art mine," "By thee I henceforth live," "Hail transmitter of my name!" "Henceforth we're one," "The devil take the rest," "We ride abreast," "Better have none than plural," "Kindness, nobler ever than revenge."

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When Gold is Green. IT may not be known to all that gold is yellow only by reflected light. If a leaf of gold, as ordinarily used by gilders, be placed between two pieces of glass and held up to the light, it will be seen to transmit a brilliant green light.

* * *

Transparent Platinum. SOME remarkable and somewhat similar properties are claimed for the metal platinum. It is said that when reduced to sufficient thinness it is perfectly transparent, and may be used as a covering for a picture, and further that it can be used as a panel for a door, when, to a person on the light side it is a perfect mirror, while to the one on the dark side it is quite transparent.

* * *

Cattle in Goggles. It is going the round of the papers that, at the suggestion of Dr. Verincourt, of the Department of Agriculture of Russia, a large number of Russian farmers have had recourse to blue spectacles in order to preserve the sight of their herds of cattle, and in one province over 4,000 animals are now meandering about with the aid of blue glasses. This has been found necessary because the reflection of the light upon the snow has been so blinding that tens of thousands of cattle have been attacked with ophthalmia. According to a recent dispatch from Vienna, the entire supply of blue glass in Vienna has been exhausted for this purpose, and it has been found necessary to obtain additional supplies from Paris and London. A farmer, who is now in Vienna, says that the sight of thousands of cattle groping their way through the snow with their eyes cased in immense goggles, is one that can neither be imagined nor adequately described.

The Diamond Markets.

THERE is not the slightest sign at present of any fall in the price of diamonds. There has been a good supply and assortment of rough, and although there were a great many foreign merchants, especially Dutch, on the look-out for bargains, few felt that they were able to find them, and thus, owing to the prices being kept up, sales were naturally feeble, as only very large and speculative firms dared to invest in rough diamonds at their present prices.

Turning to Amsterdam, the complaints are very great, as on the whole the month of June, which is generally a very good one for trade, has been very unsatisfactory. They have probably suffered the first effects of the expulsion of the Jews from Russia, as in all times and all countries the diamond trade has been largely in the hands of the Jews, many of which on previous years flocked to Amsterdam and Paris in the month of June for large purchases of diamonds for their great fair at Nizhnee Novgorod, where a large diamond trade is always done with the Easterns who annually visit this fair. This Russian policy strongly reminds us of the probability that history repeats itself, and that the sad experiences of Spain will follow as a consequence. The Amsterdam merchants now look forward to a better sale with the Russians, who will probably have exhausted their stocks in August. As usual there are a number of American buyers, who are simply purchasing fine stuff, especially now that 12½ per cent. duty and expenses have to be paid. Through the high price of rough, many large manufacturers did not feel justified in buying, and so cutting has been quiet.

In Paris no improvement has taken place, probably owing somewhat to the South American troubles, as no merchant or anyone else there now thinks of investing in diamonds, although it was previously a very fair market. The United States buyers are still seeking fine stuff, but want it at such low prices, and drive such hard bargains.

COLORED STONES.

Extra fine goods are still sought for. Rubies still command a price that would frighten any but the few into whose hands they fall. Bright Siam, of about from one to two grains, are much asked for and bring large prices; small and poor stuff is plentiful and low. News from the Jura, Switzerland and Germany is of a heartrending nature. Mills are standing idle, and whole families are starving, as it is necessary for the whole family to work to be able to cut those small hard stones at about two shillings a carat.

Board of Trade Returns for May.

The Board of Trade returns for May, compared with the same month for 1890 and 1889, were as follows:—

Imports—Watches.

Watches and parts thereof—

May 1891.	May 1890.	May 1889.
£51,218	£74,327	£59,054

Decrease compared with last year, £23,109.

Imports—Clocks.

Clocks and parts thereof—

	May 1891.	May 1890.	May 1889.
From France	£11,808	£14,824	£13,255
,, United States...	£12,479	£7,752	£6,137
,, Other Countries	£20,466	£19,056	£16,865

Increase compared with last year, £3,121.

Taking the year from its commencement it shows an increase of over ten thousand pounds worth of clocks imported, compared with the same period of last year. The above figures for May point to a decrease in the trade with French clocks, but great increase with the United States and other countries, amongst the latter of which Germany stands prominent. As, however, the new discoveries of "Mexican Onyx" will probably give an impetus to the French trade, we may shortly see the figures somewhat altered, unless the Americans lay themselves out for cutting and polishing this material, as we hear they are doing.

It is, however, very gratifying to find such an immense drop in the import of watches. We only hope it means so much more trade in English watches.

ANSWERS TO CORRESPONDENTS.

Inquirer.—We have read with mixed feelings the absurd nonsense that has been written in various journals connected with the trade regarding the watch as a compass. It is only another illustration of how important it is that a trade journal should be conducted by one who knows what he is talking about; but of course we cannot spend our time or waste our space in setting these foolish people right. With reference to the other journal and the painted diamonds, it is to be accounted for in this manner: a number of men write to editors offering their services, each assuring them of his special qualifications; their coutributions are accepted by the editor, who, of course, is responsible for inserting the rubbish, but if he does not know right from wrong, so much for the general worth of the journal!

J. Watson.—Please take the answer to Inquirer as yours also. Allow me further to remark that we purpose giving a series of short elementary papers on astronomy, or upon that branch of the science inseparably connected with our trade, so that should any fresh assertion be made in connection with the measurement of time, or the relation of the motion of our planet to any other body, our readers will be able to tell if it is correct.

W. J. T.—We are glad to say that we can reverse the proverb "When doctors fall out the patient dies." The intaglio submitted is not a peridot, as three West-end jewelers say; nor a green sapphire, as another Bond-street jeweler believes it is; nor is it a chrysoberyl, nor even a tourmaline, or spinel. The only persons who were right in what they said were "the others who said they did not know." It is simply green obsidian, or natural glass, by which is meant a mineral that presents no crystalline structure. The absence of crystalline structure in obsidian originates in the lava cooling too quickly, before crystals had time to separate out. Sometimes, however, there are tiny little elementary crystals—if I might use the expression—called microliths etc. · but when these are not present, it always contains more or less gas bubbles; sometimes they are so numerous and close as to give rise to *chatoyancy* (see *Horological Journal*, Jan., 1891.) A good lens, especially a platyscopic, will at once show these bubbles in your intaglio, which will immediately distinguish it from peridot; whilst its softness will distinguish it from either of the other gems, and its specific gravity would distinguish it in a moment from anything else, it being only rather more than half that of a sapphire.

Messrs. L. Bros., I. M., G. J., and others.—Our article on the subject of which you write will give you the information you require, as the case at present stands. We do not, however, intend to let it remain here without testing its validity in some way.

A. R.—So long as the club system is conducted on the lines it is by the firm you mention it is perfectly legal. We are in the position to tell you the agent is their paid weekly servant, and that his retainer wages (we don't say how small it is) are sent to him every week. When the disturbance was made about the newspaper watch lottery, we believe that in Parliament watch clubs were pointed out as being legally conducted, and thus differing from the newspaper lottery.

J. Wallis.—The watch case in which "only a unicorn's head is distinctly visible," is of Dublin stamping; the other figure which looks like Britannia is Hibernia, one of the duty marks; it is, no doubt, 18-carat. The shape of the shield is more important than the type of letters, Roman capitals having been used several times, viz., from 1646-1670, from 1746-1770, and from 1821 to 1846.

I. Angel.—Yes, it is easy if you know anything of Equations to be able to tell the quality of any gold by taking its specific gravity. Thus, supposing the article to be composed of gold and copper, and knowing the specific gravity of these, we find one cubic inch of water weighs 0·528oz. Troy, gold 10·160oz. Troy, copper 4·602oz. Troy (or if it is the alloy usually employed in 9-carat gold—11 parts silver and 7 copper—6·84oz. Troy). Article examined to be 6·864oz. Troy. Then by Equations we find (y) copper equals 0·595 and (x) gold equals 0·407, or 9 carats 3 grains fine. It was, indeed, in connection with a similar experiment that the great Greek Philosopher discovered the laws of specific gravity, and which dawned upon him first when in his bath, its realization being so overpowering that he ran home out of the bath, forgetting to dress, exclaiming as he went along the streets, *Eureka! Eureka!!*

J. S. Watson.—We are much obliged to you for your letter *re* the articles on Crystallography, and we hope you are by no means the only one who has derived instruction from them. We have heard them very highly spoken of all through the country, which of course is very gratifying to us, as no one has ever attempted this subject before. We intend publishing them in book form very shortly, as soon as the last article appears, and this we intend to make the first of a series of hand-books on subjects connected with the various branches of the trade. The physical properties of gems will form a separate series, and that is why we make no allusion to those and other properties.

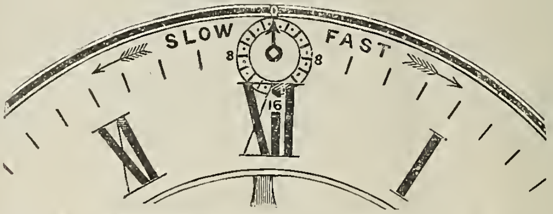
L. Dumoret. — The address of the *Journal Suisse d'Horologerie* is 3, Rue Neskar, Geneva, and the *Revue Chronometrique* 154, rue St. Honoré, Paris.

J. B.—You are a little wrong about machine-cut files. We have frequently heard it remarked that the absolute regularity of them produces ridging of the surface of the object. To obviate this some machine file cutters employ one inch of one number and the next inch of another alternately. The heaviest work can be done when the file is held so that the point of the diamond is brought straight against the metal. If the operator is left-handed the file should be "rowed" accordingly.

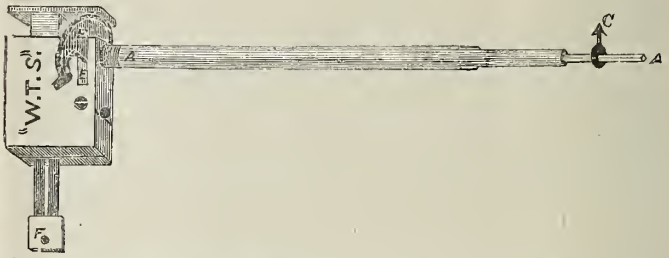
A. B. S., Perth.—The commonest liquid flux in use for "all sorts of rough work" is prepared as follows:—Add pieces of zinc to hydrochloric acid until it ceases to effervesce. After standing a day or two filter and compound with one-third its volume of spirits of sal-ammoniac and dilute as required.

To the Editor of The Watchmaker, Jeweller and Silversmith.

Dear Sir.—I was surprised to see in the Jeweller for April an illustration of a portion of my patent for the suspensions of regulators for French clocks. Had I been aware of your intention of inserting it, I would have asked if you would have been kind enough to have inserted full illustrations, so as to have conveyed a better idea to your readers of the working of the regulator.

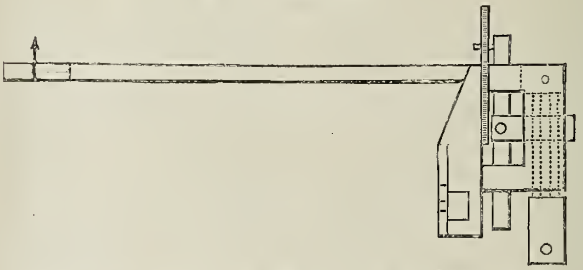


No. 1.–Part of dial showing Indicator and Pointer.



No. 2.—Single Snail Regulator for rise and fall pendulum, ready to be screwed on cock of clock.

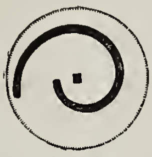
Brocot's principle.



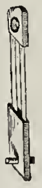
No. 3.—Regulator with double Snail as screwed on to cock, raises and lowers stud regulator on Brocot's system.

The system illustrated with the single snail raises and lowers the pendulum, on the same principle as the snail on the regulators of English chime clocks. This system will be at once understood by those who have seen an English chime clock. This regulator for French clocks has had an exhaustive trial for some years, and is thoroughly reliable and cannot get out of order; *it cannot unscrew or overturn as the regulators at present in use are liable to do. Further, you can see by the indicator on dial in what position the regulator is, which you cannot do with any other system now used on French clocks.* The indicator also shows which way and how much to alter the regulator. *With this regulator there will be no occasion to send a man to regulate a French clock*, as the *owner of the clock or even an intelligent child could do it.* The double snail illustrated regulates in the same way, but it acts on Brocot's principle; instead of lowering or raising the pendulum, it lowers and raises a stud, thereby shortening or lengthening the play of the suspension spring, according as the clock is required to go faster or slower.

Perhaps I may be allowed to say that several years ago I was struck with the inadequacy of the regulators in French clocks, their uncertainty and overturning, *and there being no guide to see how much to alter the regulator, or in what position the regulator was, whether at top, bottom, or where.* I dare venture to say that every practical man amongst your readers has experienced the same thing, and has also been surprised that a more scientific and correct system has not been invented years since by French clock manufacturers, instead of their still groping in the dark when regulating their clocks, the same as we used to do 60 years since with the circular regulators on verge watches, which is a fair comparison of the system at present used in French clocks. It has surprised me the French clockmakers have not adopted this system which is similar in principle to the regulators on English chime clocks, which are scientific in principle, and answer every purpose. The Germans have just adopted this principle for their clocks. I am aware the French clockmakers have a great demand for their clocks, consequently they may consider there is no occasion or necessity to improve them; I am also aware that French clockmakers do not make the suspension or regulator at all, but that all buy them from suspension makers, and that suspension making is a trade of itself. Yet, for all that, I should have expected some French clock manufacturers would have had a desire to improve their clocks, and have adopted a system by which any person, whether in the trade or out of it, could see how much to alter the regulator of his French clock when it required it, as easily as he could alter his English chime clock.



No. 4.—Double Snail before being rivetted on the arbour exact size.



No. 5.—Suspension Spring exact length.

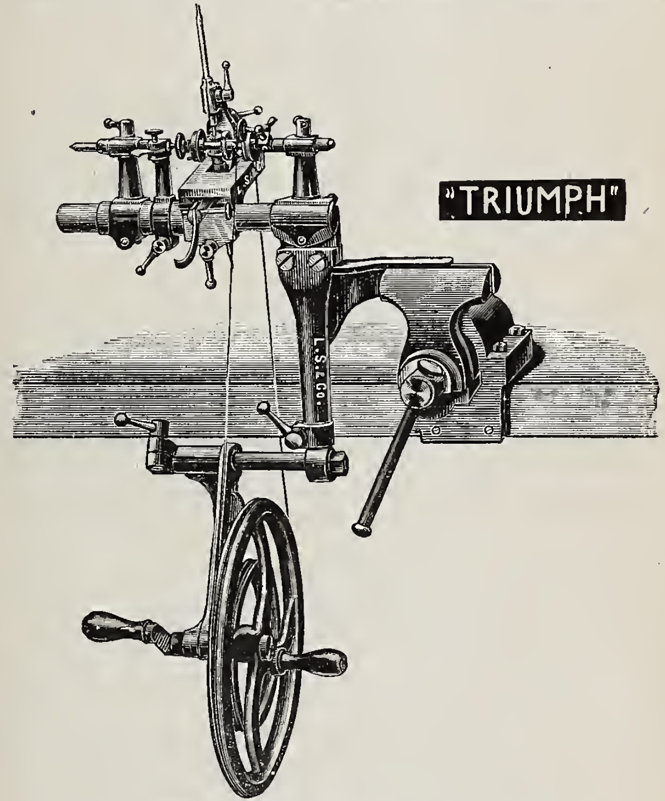
The first French clock manufacturer who does adopt this system will benefit accordingly, for everyone who tries them the results will be so satisfactory that they will not wish to have any more regulators on the old system, and the extra cost wholesale to the clock dealer will be very little, which amount may be saved in the time in regulating, besides the satisfaction of selling a clock that has a more scientific regulator, and is consequently a more perfect clock. I have never shown a clock with this regulator to a practical man, but he has said it is the system that has always been wanted for French clocks. I have also exhibited it at the British Horological Institute, and have had the honour of having submitted one to Lord Grimthorpe, the president, who was kind enough to say it carried out what was claimed for it, and was a great improvement on the systems at present in use. I hope to see French clocks on this system shortly on sale in this country. Any clockmaker desiring to introduce this regulator to the trade will, I feel sure, be satisfied, that it must sooner or later supersede the old systems entirely as completely as the present regulators on watches have superseded the old circular regulators.—I am, yours faithfully,

Market Place, Dewsbury. W. T. STORY.

Things New or Noteworthy.

THE makers of the well-known "Triumph" lathe are bringing out an additional accessory of great value to every watchmaker, in the shape of a new patent rounding-up tool, which is likely to still further establish the claim of superiority for the "Triumph" lathe. The illustration shows the new tool as fitted to the lathe. It combines with the well-known accuracy of workmanship of all "Triumph" tools, a number of important improvements, and there is no doubt that it will eventually supersede all the old styles in the same degree as the "Triumph" lathe has superseded the old-fashioned turns.

The advantages of the new tool are summarised as follows: (1.) Excellence of workmanship and accuracy in every detail. (2.) Easy handling on account of simplicity of construction. The vertical sliding movement usual in the old patterns of rounding-up tools has been replaced by a revolving movement, which affords the advantage of the worker being able to look at the wheel under treatment from all sides. For the fastening of the lower runner the same improvement, as was lately introduced for the fixing of the T-rest of the "Triumph" lathe has been employed, viz., the socket is split and the ferrule with the lever screw can be turned into any desired direction. The arbor with the cutter revolves between two female centers of the lathe, one of which bears a carrier pulley.



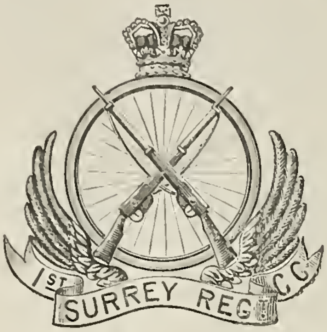
NEW PATENT ROUNDING-UP TOOL.

The cutter is adjusted by means of the vertical finger, while the position of the wheel is regulated by the horizontal finger. Both are easily removable in order to prevent injury to the hands with their sharp points. The mode of operation will no doubt be easily understood from the above illustration. It is scarcely necessary to mention that, being interchangeable, this new tool will accurately fit any "Triumph" lathe previously acquired.

The tool will be supplied with 12 heads and 4 runners. The usual kind of cutters can be employed.

* * *

WE have just received from Mr. Sydenham, a new illustrated list of silver medals and badges, suitable for cyclists, all kinds of athletic sports, volunteering, etc. It is interesting to note what a heraldry of its own each of these are developing. The winged wheel seems to be regarded as the cyclist's emblem. All kinds of sports have their own heraldry represented in some very cheap and effective designs, all possessing sufficient artistic merit to induce anyone to wear them, and look upon them as an ornament in addition to the honor which they represent. The badge illustrated above is now having a good time of it, but is only one of some hundreds.


1st SURREY REG C.C.

Questions set at the City and Guilds of London Examination in Watch and Clock making, April 29th, 1891, for which three hours were allowed for the Answers.

Ordinary Grade.

1.—Give definitions of the following terms :—“ Center of gravity (mass-center),” “ moment of a force about a point,” “ cycloid.” (25 *marks.*)

2.—Explain how the fusee adjustment should be rectified supposing the mainspring to pull over, either (1) at the top, (2) at the middle, or (3) at the lower turns of the fusee. What force would a one-ounce weight on the adjusting rod, three inches away from the center of motion, represent at the great wheel teeth, supposing the wheel to be 0·4 inches in radius ? (30.)

3.—Describe and illustrate with a rough sketch the rocking bar form of keyless mechanism. (45.)

4.—Give a brief description of some usual form of “ watchmaker's lathe,” and your opinion as to its capabilities. (30.)

5.—Roughly sketch and explain with reference to capillarity the forms given to a jewel hole, endstone, and pivot. (30.)

6.—Compare the action during impulse of a “ club ” tooth lever escape wheel with one of the ordinary form. What are the advantages and disadvantages of the “ club ” tooth ? (30.)

7.—Calculate the length of a 1½-seconds pendulum, the length of the seconds pendulum being taken at 39·14 inches. (25.)

8.—What is meant by a train of 16,200 ? If there be 84 teeth in the great wheel, a center pinion of 12, and 4 turns on the fusee, how long will the watch go ? (25.)

9.—Explain any methods you may be acquainted with of regulating clocks from the dial. (25.)

10.—Explain, by the aid of a rough sketch, in what respect the action of a high numbered wheel and pinion will be preferable to a pair of lower numbers, the pitch circles being the same. (25.)

Honors Grade.

1.—What is meant by (1) “modulus of elasticity,” (2) by “ middle temperature error ? ” (28 *marks.*)

2.—How do you account for the fact that the breaking of a main-spring in a going barrel watch is often accompanied with damage to the great wheel teeth and center pinion ? Describe a contrivance for preventing this. (15.)

3.—Mention the successive operations in the production of watch wheels by machinery, and roughly describe a form of engine suitable for cutting the teeth of the wheels in groups of fifty at a time after the wheels are “crossed out.” (32.)

4.—Compare the “ movable ” and “ fixed star ” systems of repeating work. Give a rough sketch in illustration. (45.)

5.—Calculate the length of the zinc tube in a zinc and steel seconds compensating pendulum, the co-efficients of expansion being for zinc ·00017, and for steel ·000064, for 10 degrees rise in temperature. (40.)

N.B.—The zinc tube rests upon the regulating nut, which is four inches below the center of oscillation, and the bob is suspended at its center, the center of the bob being taken as the center of oscillation.

6.—Describe the characteristic features of some form of “ non-magnetisable ” watch. (20.)

7.—Briefly indicate the means by which clocks are “ synchronised ” by electricity. (32.)

8.—Give a general idea of the mechanism which causes the hand of a “ chronograph ” to start, stop, and to return to its starting-place, by successive pressures on the crown piece. (35.)

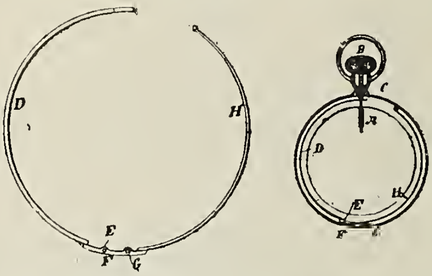
9.—What is meant by “ coil friction ” ? Compare a tapered mainspring as used in a fusee watch, and its action, with a “tapered” mainspring as sometimes used in a going barrel watch and its action. (25.)

10.—The radius of gyration of a chronometer balance being 0·04 of a foot, and its mass ·0006, what is the moment of inertia of the balance ? (28.)

Illustrated Inventions Record.

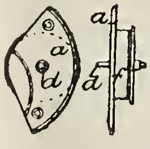
Watch-case Spring.—Josef Pallweber, Furtwangen, Baden.

The combination of a watch-case with a pair of springs D H, a lever F, acted upon by both of said springs, a pin G, carried by the lever, and a lid engaged by the pin, substantially as specified. The combination, in a watch-case, of spring D, having hook C, with stem A, that engages spring, and with spring H, lever F, engaged by springs D H, pin G on lever F, and a lid engaged by the pin, substantially as specified.



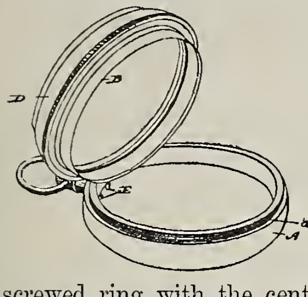
Watch Barrels.—J. Burr, 29, Commercial Road, Bedford.

To prevent damage to the watch by breakage of the main-spring, and to allow removal of the barrel without displacing the top-plate, the barrel *f* is made in one piece with a bridge *a* screwed to the watch plate, and the barrel arbor *d* is provided with driving ratchet wheel and maintaining spring as a going fusee.



Watch-Case.—Edward F. Heffernan, Toronto, Ontario, Canada.

The combination, with the center of a watch-case, of a rim hinged to the center and having the back or bezel connected to said rim by screw-threads formed on said back or bezel and rim substantially as described. A watch-case hinge formed by one or more pins pivoted on the back, bezel or rim, and constructed to move longitudinally in holes made in the center, substantially as and for the purpose specified. In a watch-case having its back or bezel screwed to the center by means of a screwed joint, a rim connected to the back or bezel and having a thread cut on it to correspond with and form a continuation of the thread which forms a screw-joint, in combination with a hinge designed to connect the screwed ring with the center, substantially as and for the purpose specified. A rim B, having a thread *b* cut on it to correspond with and form a continuation of the thread *a* on the center A, and a hinge to connect it with the said center A, in combination with a bezel or back D, having a thread cut on it to engage with the threads *a* and *b*, substantially as and for the purpose specified.



APPLICATIONS FOR PATENTS.

- 8,633.—Charles Henry Mannon and George Henry Rayner, London, "Device for fastening scarf and other pins." Dated 20th May, 1891.
- 8,754.—Henry Swanbury, London, "Safety device for brooch pins." Dated 22nd May, 1891.
- 8,889.—Ernst Gustav Hoffman, London, "Solitaires, studs, and similar fasteners." Dated 26th May, 1891.
- 9,157.—Thomas Valentine Ferguson, London, "Tell-tale apparatus for clocks." Dated 1st June, 1891.
- 9,298.—Duncan Edmund Grant, London, "Watch and clock calendar." Dated 2nd June, 1891.
- 8,846.—Richard Allerton, London, "Brooch fastenings." Dated 25th May, 1891.
- 8,864.—Joseph Henry Stewart and Herbert Ernest Smyth, London, "Safety device for brooch pins." Dated 25th May, 1891.
- 8,922.—Henry Smith Prentiss, London, "Electric clocks." Dated 26th May, 1891.
- 8,925.—Christen Rees Bonne, London, "Electric clocks or timepieces." Dated 26th May, 1891.
- 9,019.—Leopold Myers, London, "Combined paper knife and magnifying glass." Dated 27th May, 1891.
- 9,190.—Samuel John Davis, London, "Electric clock." Dated 1st June, 1891.
- 9,386.—James Kendal, London, "Portrait dial watch." Dated 3rd June, 1891.
- 9,409.—George Henry Stephens, London, "Folding eye-glasses." Dated 3rd June, 1891.
- 9,441.—Samuel James Powell, London, "Safety brooch pins." Dated 3rd June, 1891.
- 9,511.—Arthur Eisen, London, "Sleeve-links." Dated 4th June, 1891.
- 9,546.—Edward Davies and British United Clock Company, Limited, Birmingham, "Securing glass panels of clock stands." Dated 5th June, 1891.
- 9,557.—John Severin Johnson, London, "Pince-nez or double eye-glasses." Dated 5th June, 1891.
- 9,587.—Adolph Myers and Leopold Myers, Birmingham, "Combined compasses and toy microscope." Dated 6th June, 1891.

We regret to have to record the death of the chairman of the Lancashire Watch Company, Mr. S. H. Hartley, of Prescot, which occurred on the 11th ult. As is well known, he was one of the originators of this company, and always took great interest in matters connected with the watchmaking industry. He was also clerk to the Board of Guardians, and was held in very high esteem by all who knew him.

Gazette.

Deeds of Arrangement.

Fletcher, William James, 11, Royal-avenue, Belfast, jeweler. Trustee: John McCullough, Royal-avenue, Belfast. Assignment in trust to secure payment of composition of 20s. in the £. Filed May 20, 1891; unsecured liabilities £2,398 9s. 3d.; estimated net assets, £4,246 3s. 1d.

Gibbs, Richard Everitt George, Bury St. Edmunds, watchmaker and jeweler. Composition of 6s. in the £, payable forthwith. Filed May 19; £1,311 18s. 4d.

Kahn, Charles (by trustee, under deed of assignment), 138 and 138a, Strand, W.C., jeweler and watchmaker. Re-assignment by trustee of debtor's estate under deed of assignment, etc., dated 26th and filed 30th July, 1889, debtor having paid a composition of 7s. 6d. in the £ to creditors in full discharge of their claim. Filed October 24, 1890.

Rose, George, 95, South-street, Exeter, watchmaker and jeweler. Trustee: Albert L. Honey, accountant, 23, Catherine-street, Exeter. Secured creditors, £513 2s. 6d. Filed May 4; liabilities, £452 1s. 3d.; assets, £161 12s. 8d.

Bills of Sale.

Adams, William, 15, Pulteney-street, Barnsbury-road, Islington, about to remove to 65, Roderick-road, Mansfield-road, Haverstock-hill, working jeweler. In favour of the Central Advertising Corporation. Filed June 6. £30.

Gompertz, Michael (and wife), 11, Bow-road, E., commission agent and traveller in jewelry and fancy articles. In favour of Henry J. Thomas. Filed June 5. £40.

Marland, Caleb, 1, Booth-street, and 203, Stamford-street, Ashton-under-Lyne, watchmaker. In favour of James Platt. Filed June 3. £31 10s.

Tritschler, Crescentia (spinster), 2, Athenæum-street, and 16, Churchill-street, Sunderland, jeweler and fancy dealer. Trustee: Robert A. Brown, C.A., Sunderland. Filed June 1: liabilities, £123 13s. 1d.; assets, £100.

Vaughan, Frederick George, 26, Gerrard-street, Islington, electro-plater and gilder. In favour of Charles G. Lodge. Filed June 23. £80.

Woolf, Henry, Church-villa, Gillott-road, Edgbaston, and 94, Smallbrook-street, Birmingham, watch material manufacturer. In favour of Albert Roe. Filed June 8. Settlement in trust for wife, etc.

Bankruptcy Record.

Appleby, James (trading as Appleby and Co.,) 55, Frederick-street, Birmingham, jeweler and general manufacturer. First meeting: 25, Colmore-row, Birmingham, June 17. Examination: C.C., Birmingham, June 25.

Beningfield, Arthur, 128 and 129, Cheapside, and The Lawn, Riverside, Maidenhead, commission agent and watchmaker. Adjudication: June 16.

Blyth, Henry John, 13, St. Nicholas-terrace, Caister-road, late 15, North Howard-street, Great Yarmouth, watchmaker. Receiving Order and Adjudication: June 15. First meeting: Official Receiver's, Norwich, June 27, at 12.30. Examination: Town Hall, Great Yarmouth, July 13, at 11.

Botton, Alfred Charles, 15a, St. Botolph-street, Colchester, jeweler. First meeting: 36, Princes-street, Ipswich, June 12. Examination: Town Hall, Colchester, June 20.

David, Leon, 42, Hatton-garden, and 17, Lancaster-road, West Norwood, diamond merchant. Trustee: L. Hasluck, C.A., 17, Holborn-viaduct, E.C. Released, April 29.

Edgcombe, James, 65, George-street, Plymouth, jeweler. First meeting: 10, Athenæum-terrace, Plymouth, June 5, at 2.30. Examination: C.C., East Stonehouse, June 22, at 11. Adjudication: May 26.

Edwards, William Jones, Church-place, Penrhyndendraeth, jeweler. Adjudication: May 16.

Hands, William Charles, Market-place, Norwich, jeweler and watchmaker. Trustee: E. J. Abbott, C.A., 77, Colmore-row, Birmingham.—Released February 26.

Jefferson, John Edwin, and William Jefferson (trading as Jefferson Bros.), 68, Low-street, Keighley; watchmakers and jewelers. Receiving Order: June 4.

Leadbeater, John, 14, Derby-street, Hulme, watchmaker. Receiving Order and Adjudication, June 12.

Marsh, Charles Henry Cromwell, 8, Belgrave-road, and 2, Five Post-lane, Dover, watchmaker and jeweler. First meeting:

Ridler's Hotel, Holborn, May 29, at 11. Examination: Guildhall, Canterbury, June 5, at 10.30.

Martindale, William, 119, High-street, Watford, jeweler. First meeting: Official Receiver's, 95, Temple-chambers, Temple-avenue, E.C., June 4, at 3. Examination: Court House, St. Alban's, June 5, at 12. Adjudication: May 22.

Rosenberg, Esther, 162, St. Paul's-road, Canonbury, wholesale jeweler, wife of Moses Rosenberg (trading separate and apart from her husband, having separate property and separate assets). Examination: 34, Lincoln's Inn-fields, June 23, at 12.30.

Williams, John Hood, High-street, Haverfordwest, watchmaker and jeweler. Application for debtor's discharge: Temperance Hall, Pembroke Dock, July 16, at 11.30.

Dividends.

Bartle, George, Scunthorpe, watchmaker. Proofs for intended dividend by July 8. Trustee: Official Receiver, Hull.

Gardner, William Henry Buckley, 5, Russell-terrace, Old Allesley-road, Coventry, watch manufacturer. Proofs for intended dividend by June 26. Trustee: Official Receiver, Coventry.

Murgatroyd, Frank, 2, Police-street, Brighouse, jeweler. First and final dividend of 5s. 11¼d. at Official Receiver's, Halifax, June 6.

Sellars, John Henry, 1, Hall-gate, Doncaster, watchmaker. First and final dividend of 4s. 5½d., Official Receiver's, Sheffield, May 25.

Winding up of Public Companies.

Washington Diamond Mining Company, Limited.—A petition for winding-up was presented on June 17 by Horatio Frederick Barnett; and is directed to be heard before the Court on June 27. John M. Mitchell, 110, Cannon-street, E.C., Solicitor.

Dissolutions of Partnership.

Gardner and Lyle, 53, St. Vincent-street, Glasgow, opticians. February 28. By retiral of James Lyle. Debts by Thomas Rankine Gardner, who continues under the style of Gardner and Co.

Thompson and Sons, 83 and 85, South-street, Moor, Sheffield, jewelers. June 1. Debts by John Thomas Thompson and William Heathcote Thompson, who continue under the same style.

No Concern of the Husband's.

Re Esther Rosenberg, wholesale jeweler, St. Paul's-road, Canonbury, London. This bankrupt applied to Mr. Registrar Linklater to pass her public examination upon accounts showing debts unsecured £1,306, and assets £157. The bankrupt stated that she had carried on business as a wholesale jeweler, her husband being her manager. He was an undischarged bankrupt, and had previously carried on business at the same address. There was an agreement between herself and her husband that he was to manage the business for her, draw bills, sign cheques, etc. The business was not conducted by her solely for the purpose of enabling her husband to trade in her name.—The Registrar pointed out that the petition was disputed, and that the examination must be conducted as being her business.—In further examination the bankrupt stated that some of the creditors knew that she was carrying on this business. Her husband traded as Moses Rosenberg, and she traded as E. Rosenberg and Co. The principal creditors were aware that she was carrying on business, and the circumstances under which it was being carried on.—Mr. Pope: Which of the creditors was aware of it?—The bankrupt: Messrs. Cox, of Birmingham.—Mr. Le Voi: They are the largest creditors. Their debt is £390.—The public examination was ordered to be concluded. It appears that upon the refused application to transfer the proceedings to the Birmingham Court, an affidavit to the Official Receiver was put in support, to the effect that, of the total liabilities, £1,270 was due to Birmingham creditors.

A Cool Bankrupt.

A meeting of the creditors of James Edgcombe, jeweler, George-street, Plymouth, was held at the offices of the Official Receiver (Mr. J. Greenway), Athenæum-terrace, Plymouth. Debtor returned his liabilities at £2,182 10s. 9d.—£2,182 owing to his mother and 10s. 9d. to Mr. Jennings. The assets consisted of stock of the nominal value of £2,500 expected to realize £1,200. In reply to the Official Receiver, the bankrupt denied that he had a pocketful of gold at the time the receiving order was made—only a few shillings. Had no books showing the amount of stock he had received. You have had stock to the value of £5,000?—That is the selling price. Then in fifteen months you have got rid of £2,500 worth of stock. Where is it?—I can't have got rid of it if it is not there. A man seized a lot of things, although I did not owe him a penny. You have been pawning a lot of goods?—One or two things. One or two!—a lot: forty-seven rings. What sort are they?—A case of rings which I pawned to pay a debt. Is that the way to do business?—I had to pay the debt. The rings may be worth £100. Although pawned for £25?—The profit would be about one-third. Have you not been constantly taking things away?—Only the goods of customers. How long have you been in business?—I don't know. About eleven years, I think. Father lent me the money. I have not disposed of property except in the regular way of business, but I have kept no cash-book since my sister left me. Do you owe the National Provincial Bank any money?—A little. Why is it not mentioned here?—It is guaranteed. I expect you will find plenty of others to whom money is due?—I don't think you will. It would be utterly impossible for me to file an account of my sales for twelve months. The stock represents all the property I have. Have you not been betting?—No; I can spend money better than that. The Official Receiver: I think you have been spending money a great deal worse than that. Debtor was allowed to pass at a subsequent adjourned examination.

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The
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and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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Technical Education and the Action of the Trade.

NEVER in the history of our country has the subject of Technical Education been so prominent, or taken such practical forms as it is doing at the present time, owing, firstly, to the Technical Instructions Act of 1889, and the action by the County Councils in the application of their grants under the Local Taxation Act to this purpose; and, secondly, to the action of various public local institutions. At present the County Councils have only made a beginning, but their action has just reached that stage where it is indispensably necessary that someone should come forward and look after the interests of our trade. We hear grumbling on all sides at the dearth of good skilful men, and we see daily large imports of work coming from other countries, where the producers have received better technical instruction than our men at home. We see other countries excelling us, and fast supplanting us with their goods in foreign markets, and industries which ought to be amongst our staple ones gradually slipping from our grasp. It is therefore necessary that we should bestir ourselves, and put the machinery into motion that will remedy all these evils, and prevent disaster in the future. It is the old tale over again; twenty-five years ago scores of men with "nice little businesses" in Clerkenwell ridiculed the idea of technical instruction, and the development of watchmaking machinery; but what is the standing of those voices to-day, where are those businesses, and how were they able to compete with the improved methods?

Another chance now awaits us, and the means are at hand to raise our trade again beyond those of other nations. The Fourth Annual Report of the National Association for the Promotion of Technical and Secondary Education has recently been published, which gives the position exactly, and which we would recommend to everyone interested in the welfare of the trade. It will be seen by a map there given, that most of the counties have taken advantage of the provisions of the Act, and intend to apply the whole of the new fund for educational purposes, and by far the greater portion is for technical education. But now comes the rub. Which trades are to benefit by this technical education, what are the subjects that are to be taught? These are matters which will be decided by those who take the greatest interest in the question. Within the last year there has sprung up an Association of organizing secretaries, representing various counties and boroughs, twenty of which have paid organizing secretaries; and what we consider the Trade ought to do, is to have its own representative on this body who would look after its interest. A conference of these secretaries was held last month, and the various questions of organization were discussed. Up to the present these organizers have been of two kinds: temporary organizers to inquire into claims and applications, to visit every district in the county, and to draw up a detail scheme resulting therefrom; and permanent secretaries to the Technical Instruction Committees, charged with the work of carrying out the schemes, and inspecting the instructions, either personally or through the employment of experts. Now there are two courses open to which this fund may be applied, which will entirely rest on the recommendation of this association; either it will be applied to practical technical education, such as would make a man a skilful workman, and transform him from a mere machine to an inventive, thinking, applying living being; or, by giving a slight turn to the definitions of the Act, the whole may drift into secondary education—an object laudable enough in itself, but which would do nothing to remedy the evils under which we now suffer.

Of course in all this we are not depreciating the action or efforts of local institutions. Few things could be more pleasing than the report in another part of this journal, or the last action of The Goldsmiths' Company in supplying the New Technical and Recreative Institute at New Cross, which was opened by the Prince of Wales last month. This is an institution of which we may be justly proud, and we hope every employee—and for that matter employer too—will avail himself of the opportunities it offers. From the advance prospectus, the Institute appears to be based upon somewhat the same lines as the Birkbeck and similar institutions, but it has a far more extended curriculum. In addition to the usual commercial course of subjects, we might mention as subjects to be taught in this excellent Institution, Brass Finishing and Fitting; Chasing and Repoussé work; Chemistry, Theoretical, Practical and Laboratory work; Design, Decorative and Ornamental, specially applied to Gold and Silversmiths' work; Drawing, Freehand from Model, Cast, Antique and Life, Geometric and Perspective; Engineering, Theoretical, Practical, and Workshop; Goldsmiths' work, Theoretical, Practical and Workshop; Mathematics (higher); Machine Drawing and Construction; Mechanics, Applied and Theoretical; Manufacture of Enamels; Metal Plate and Zinc Working; Metal Turning and Fitting; Metallurgy, Modelling from Cast and Life; Painting, Oil and Water Colors; Pattern-making; Photography; Physics, Theoretical and Experimental; Silversmiths' Work, Theoretical, Practical and Workshop; and Watchmaking. It will thus be seen to what an extent the requirements of our trade are met in this admirable institution. But as we remarked in connection with the Birmingham School, so we say of this, it will not be complete until gems as factors in design, &c., are recognised; whole text books on designs, the blendings and properties of color, exist without a single reference to the colors of colors as exemplified in gems, in the face of the fact that it must of necessity follow that the more intimate a designer becomes with the properties of his materials, the richer, newer, and more pleasing must be his combinations and productions.

The Royal Naval Exhibition.

IN our next issue we intend to give some detailed account of this interesting exhibition, and in the meantime we advise all our readers to find an opportunity of seeing it, especially that part of the exhibition which relates to our trade, as there is a great deal more to be seen than relics of questionable genuineness.

The Burmah Ruby Mines.

WE regret we are unable to give the full details of the meeting held in connection with these mines, as they are of special importance to the trade. Next month, however, we purpose giving some special information on the subject, as the results of the operations go to show that rubies are about as rare as we have been led to think they are, and even, perhaps, a little more so.

Communication with the Stars.

ONCE more the question of communication with the planets is brought to the front by a French lady leaving a sum of £4,000 to the French Academy of Sciences for any person who should within ten years be able to communicate with any planet or star, and receive back a reply from it. Probably this has been an ideal in the old lady's life, who was 91 when she died, as it will be remembered that several times during the period of her existence the question has been re-introduced. One method suggested was to cut a huge trench or canal in the flattest place to be found, which should be a colossal diagram of the well known proposition in Euclid, the square on the base plus the square upon the perpendicular equals the square upon the hypotenuse; to fill the trench with, say, naphtha or petroleum and set it on fire, and wait and see if any reply was made, as the diagram would clearly show itself to be the work of intelligent beings. And if the dwellers in our sister planets had progressed at all in civilisation they would be sure to recognise the demonstration of this fundamental law.

The Lancashire Watch Company.

THE first excursion of the employees of the tool department of the above Company was held last month at Blackpool. The proceedings commenced by breakfast at the Palatine Hotel, Mr. Blaiklock in the chair. The Chairman, regretting the absence of Mr. Hewitt, said his first duty was to propose the toast, "Success to the Lancashire Watch Company, and the health of the managing director, Mr. T. P. Hewitt." The toast was heartily drunk. In continuation, he said he was glad to be with them on their first beanfeast, and he hoped it was a happy augury of many more to follow. He alluded to the watch factory in striking out a path for itself in the manufacture of watch movements, in order to compete with America. They had with them that day one of their American cousins, whom, he was sure, they all welcomed. He hoped the day was not far distant when they should have reached the same degree of mechanical skill as that of the Americans. Nay, it was their duty to try and beat their cousins across the Atlantic. It was their duty to help the Lancashire Watch Company by doing what they could in their respective spheres, because by helping the company they were helping themselves to prosperity—(cheers)—and when the time came that the company was enabled to pay higher dividends he believed, as a natural result, it would follow that the employees would enjoy a higher state of prosperity. He hoped they would all heartily drink to the health and prosperity of the Lancashire Watch Company. The Chairman next proposed the toast, "Success to the Amalgamated Society of Engineers," which was responded to by Mr. J. L. Layland. The company then proceeded to inspect the various places of interest in the town, making a very enjoyable day of it.

The Coventry Watch-movement Company.

IN our last issue we recorded the annual meeting of this company, when the very advisable course was proposed of increasing the trifling capital with which it has been worked up to the present. A special meeting was held about three weeks after to pass the resolution, Mr. S. Yeomans in the chair, who expressed himself confident of the success which would follow; he also informed those present that a new price list had been drawn up between the company and the Prescot Company, which list would be adhered to by all parties.

Since this meeting Mr. Yeomans has been on the Continent examining the various methods employed there, an epitome of which he gave at the subsequent confirmatory meeting of the shareholders of the company. He said he had been over several factories, and had found that the principal ones were working on the same lines as those adopted by the directors of their company. They had thrown aside the old Swiss machinery, and were going in largely for American machinery, believing that there was no comparison between the two systems. It appeared to him that the only way in which Coventry manufacturers could hope to maintain their hold on the trade was by adopting the new method more extensively. He considered that this company would be of very great assistance in this respect, and that its formation was a step in the right direction. Manufacturers by using the movements turned out by this company would not have to make the whole watch throughout, but would, in due course, have the movement supplied to them with the first half done, so that manufacturers would only have to procure plant for the completion of the watch. The resolution as to the issue of preference shares was agreed to.

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London, 1862.
DIPLOMA: MELBOURNE, 1880-81.

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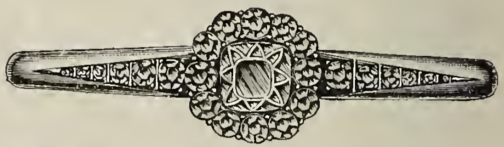

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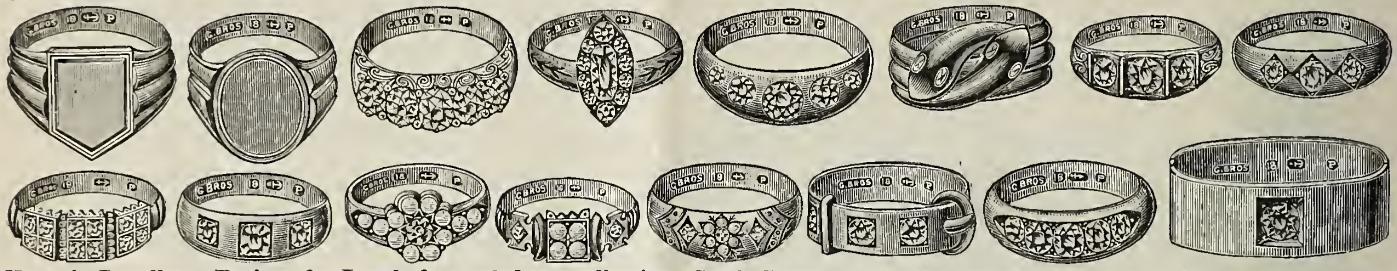

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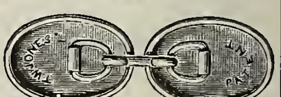

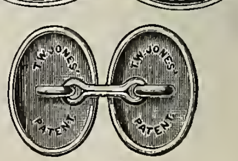

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Notes About Town.

THE general state of trade during the past month has been a decided improvement upon last, assisted probably by the much better weather. There is no disputing the fact that whatever moves the Court moves trade, and so the German Emperor's visit has stimulated trade in many directions. The various receptions, &c., given necessarily called forth a grand display of jewelry, which in some cases was new for the occasion, and may or may not be the pioneer of new fashions; while most of the display consisted of reappearances of well-known and familiar faces, which are usually excluded from daylight. Many a "plate chest" was removed temporarily from "the well" in which it had been for a long time deposited, and where it has now gone back again. It might not be considered as adding to the safety of their places of deposit to publish the places where most of them are kept, although we should like to do so. We know one place specially constructed for their reception, where the chests are numbered by hundreds, many containing priceless historic treasures. Here they lie buried, unknown to all save a few, only being moved about by the machinery expressly constructed for the purpose.

* * *

The Late Display of Jewels.

THE display of jewels made by the Court lately reminds one of the stimulus given in that direction by the gentleman who styles himself the King of Kings, on his first visit to this country. Since then there have been more diamonds added to the world's stock than previously existed, so that it is only natural that the late exhibition should have rivalled the former. There have been two noteworthy displays; the one at the Opera House and the other at the State Ball given by Her Majesty. In the former case the Queen led the way in diamond collet necklaces, and was followed by the larger portion of the ladies present. The Princess of Wales was adorned with a diamond collet collar, the beauty of which is known to everyone through her portrait, if by nothing else. Occasionally could be seen magnificent tiaras and dog-collars *en suite;* the grand display of the Hon. Mrs. Carrington being of rosebud and leaf design. Almost all the ladies wore tiaras; that of the German Empress being of great beauty and size, composed of diamonds and large pear-shape pearls. In most of the other instances the tiaras were wholly composed of diamonds. Frequently very fine strings of pearls were employed, either by themselves or in addition to the diamond necklace. The Princess of Wales wore several loose strings of diamonds and pearls alternately. In very many instances the lace and other trimmings were caught up with diamonds, from whose snug folds they shot out their fiery splendour. Immense sprays were employed, and several ladies had their bodices entirely covered with diamonds. Apparently the dresses, as a whole, were made subservient to the display of the jewels to their best advantage; and when colored stones were employed, white satin was almost invariably resorted to, as exemplified by the German Empress and Lady Carrington, whose sapphire necklaces were the best specimens of colored stones present. At the State Ball, in accordance with the known taste of Her Majesty, diamonds and black preponderated. The display, however, was in no way inferior to that at the Opera House, and in many respects even excelled it.

What is Worn in Society.

CONVERTIBLE tiaras and necklaces are "all the go" just now, and some magnificent specimens are to be seen, not only in diamond and pearl, and diamond and colored stone, but in fine half pearl and diamond work. The silver wedding present of the Princess Christian is a diamond and pearl convertible tiara and necklace.

Long sprays down the front of the dress, or as head ornaments, are still the rage. These are chiefly orchids, or flowers of pentangular or hexangular symmetry; the latter capable of being worn singly, as were stars, either as hair-pins, or by more matronly dames, in threes or fives, as back combs or tiaras. Although diamonds are very great favorites, colored stones are certainly far more noticeable, and more inquired after than has been the case for a long time.

* * *

Demand for Colored Stones.

IN consequence of the last mentioned fact fine colored stones are much sought after, and very difficult to obtain, whilst the prices asked for anything fine are almost incredible. Two years ago, when the Burmah Ruby Mines were thought to be of sufficient importance to make their acquisition a question for Government consideration, it was believed that rubies of unheard-of size and beauty would soon be rolling into the market. But with the anything but satisfactory returns of this enterprise, people have got to fully realise that rubies are likely to remain as scarce as ever; and whatever little spurt the Burmah Mines might at any time make, it is questionable whether they would have much effect upon the price. So far as the present and future of rubies are concerned, no better result could possibly have followed the recent mining, for had the first efforts been rewarded with anything like success, it cannot be doubted that the price of rubies would have suffered materially. But as it is, when all the skill of modern mining engineering and machinery has failed to add to the production of the gem of gems to a greater extent than two thousand rupees a month, people have come to believe in the rarity and value of fine rubies more firmly than ever, and more than could have been the case under any other circumstances.

* * *

The Lord Mayor a Baronet.

WE presume that all our readers will be glad to hear that Her Majesty has been pleased to confer upon the Lord Mayor a Baronetcy of the United Kingdom. Whatever may be the value of that distinction in the eyes of some of us, considering how easily it has in many cases been obtained, it, at any rate, marks the appreciation of the Sovereign, who, had she known more of the history of the Lord Mayor, would not have required a visit of the German Emperor to prompt her expression of appreciation of his actions. And although, from party reasons, some people have thought fit to attack him, by the great majority, and particularly by the trade to whom he is best known, his many sterling qualities are fully appreciated. By none is he more appreciated than by those connected with the charities of our trade. Frequently when men rise to high dignities they forget their former surroundings, but not so with Sir Joseph Savory: the little charities of the back neighbourhoods of Clerkenwell were not beneath him, nor the welfare of the poor worn-out workman beyond him; but, as soon as he rose to greater influence, he nobly employed it in every legitimate way—including the help of his own purse—to assist the various institutions in our trade.

* * *

The Royal Hunt Cup.

MESSRS. HANCOCK have this year obtained the order for the Royal Hunt Cup, a piece of work which should always be viewed by all in the trade who can find the opportunity. Usually the firm exhibit their large pieces in one of the windows. This year it is worth about £1,000, and stands about 28in. high. the base being about 27in. by 20in. The design is by Mr. C. B. Birch, A.R.A., and represents two deer (*Cervus elephas*) in an often pictured and witnessed attitude of fighting, with a lady deer watching the affray from behind a hawthorn tree. Altogether it reminds us of one which was made a few years ago by Messrs. Hunt and Roskell for the same trophy, which probably is the finest struggle ever modelled. The expression of pain in the face of the vanquished animal, into whose neck the tine of his rival's antler has entered, is so lifelike that one almost thinks it is real.

* * *

West-end Windows. There was a time when very little indeed was exhibited in Bond-street windows, but that time has gone by. Even the grand old classic front of Messrs. Hunt and Roskell has been rejuvenated, and some of the finest things shown may now be seen in it. Nor is it thought to be beyond the dignity of the Bond-street jeweler to expose any novelties he has, alike to the plagiarist trade and the public. The late exhibition in the window of Messrs. Henry Lewis, of pearls *in situ*, with the mollusc that produced them, probably brought forth more press notices than anything done by any other member of the trade during the same period. A seven-dial calendar also attracted a great deal of attention in the same window, and was rewarded by Royal patronage.

* * *

Making the Best of It. One could not help admiring the vigor of the new blood lately introduced into the old firm of Messrs. Mappin Bros., in connection with the gold casket for the German Emperor. Of course such things are objectively and subjectively "Ads.," but it frequently happens that these things have to be "rushed," and that they are only finished perhaps a day or two before they have to be delivered; consequently there is not much time for exhibition. Fully appreciating this, the above company had a large ticket (gold incised letters on a dark ground) placed in the centre of the window, informing the public that the casket was in course of manufacture; and so the best was made of the advertisement. We have known several hundred pounds lost over these public presentations, though not exactly by these caskets, as the price of them usually is not much more than £100. Sometimes, of course, this figure is greatly exceeded, as for example in the case of the casket presented to the Emperor of Russia, which was about the finest specimen ever turned out.

* * *

The Kaiser's Casket. This casket, being one of the most elaborate of this class of production, deserves some special description. Differing from most of its fellows, the inspiration for its conception has been drawn from the Gothic, and might at first sight be taken for a photograph of some piece of the Guildhall, so rigidly throughout has the pointed Gothic been adhered to, thereby avoiding those mixtures of fish, flesh, and fowl which are sometimes produced in bringing together objects widely disconnected from each other. It is transversely parallel, with re-entering and rounded ends. On one side in the centre are the Imperial German Arms, on either side of which is a panel representing Fame and Justice respectively. On the opposite side is the inscription, and on the two adjoining panels, divided by pilasters, are representations of Commerce and Prosperity. The two end panels represent historical events connecting the two Countries, England and Germany. The lid rises in a well-proportioned inverted curve, the four panels containing views of main public buildings of the City. This is surmounted by a figure which may be new to many—we are hardly sure of her name—but she represents London · at first sight she might be mistaken for Britannia, as she sits in a similar pose to that usually given to that goddess, holding her left hand upon a shield, not the Union Jack, but the City shield, and instead of having to balance herself on the thin edge of the shield she is accommodated with a high-back seat with a bale of merchandise behind it. In her right hand she holds the caducens of Mercury, and further, the helmet is replaced by a winged crown; in short, the lower and brutal passions of war are replaced by commerce and commercial intercourse, which now conquer and constitute the world. Around the upper mouldings of the body of the casket is a floriated border, the City arms occupying a central position over the Imperial Arms, and a German Eagle at each end, and over each of the end pilasters of the front. Around the base are the arms of the various German States, the whole being supported upon "open arches." At each end of the casket sits the well-known City Griffin holding a shield bearing the Arms of London. This rests on a plinth covered with blue velvet with a silver-gilt border, carrying an inscription, which rests again upon an ordinary velvet plinth-base. The whole of the casket is in 18-carat gold, and the whole of the heraldry carried out faithfully in enamels.

British Horological Institute.

THE annual meeting of members of the British Horological Institute was held on Tuesday, July 21st, at the Horological Institute, Northampton-square, Clerkenwell, Mr. Daniel Buckney, vice-president, in the chair. The report for the year, which was submitted by Mr. F. J. Britten (secretary), stated that so far as the financial condition of the institute was concerned, its progress had been satisfactory. During the year there had been added to the institute twenty members and two associates, and the institute now numbered 403 members and. fourteen associates. The Chairman, in moving the adoption of the report, said with the exception of the loss of the City and Guilds' grant, the statement was satisfactory. Mr. Henry Ganney seconded the motion, which was agreed to. Lord Grimthorpe was elected president, and the vice-presidents were Messrs. Daniel Buckney, Charles Dunn, Thomas Hewitt, John Jones, F.R.G.S., and John Tripplin, F.R.A.S. Mr. Thomas Mercer was elected treasurer, and Mr. F. J. Britten, secretary.

New Discovery of Opals.—Some very fine opals have recently been discovered in White Cliffs, about fifty miles north of Wilcannia, in a formation corresponding with the Desert Sandstone of Queensland, through which it occurs as a cementing infiltration, replacing calcaeous and other organic remains, so that casts of shells and wood are found also in this locality. Mr. Wollaston exhibited several of these opal fossils at the late Crystal Palace exhibition, but could not be induced to part with them; but, now they have turned up in another locality, they will not be such curiosities.

We regret to have to announce the death of a veteran clockmaker, Mr. E. T. Loseby, of Leicester, whose name is so well known through the trade in connection with the celebrated clock at Coventry, to whose performance we have often alluded. He had during the latter years of his life been engaged in constructing a clock for Leicester, which, unfortunately, is left unfinished. Despite the fact that he was never a robust man, he attained the age of seventy-three. Nor were instruments of precision in horology the only objects of his skill; he constructed a most accurate barometer which will most probably be brought before the public. He also possessed some astronomical skill, and was able to take time from the celestial orbs, by which he checked the results of his timekeepers.

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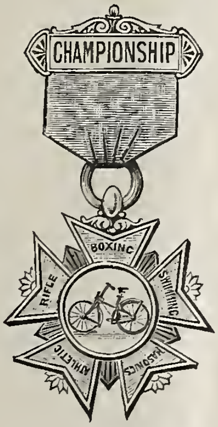

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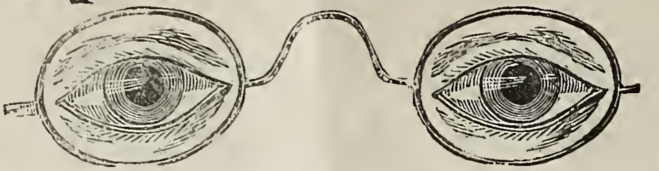

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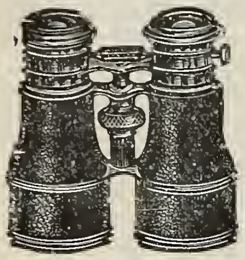

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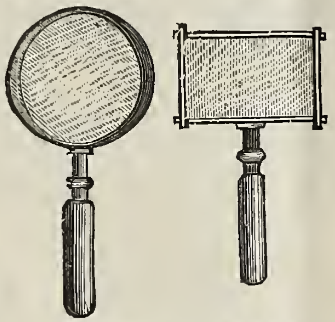

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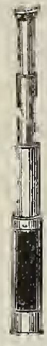

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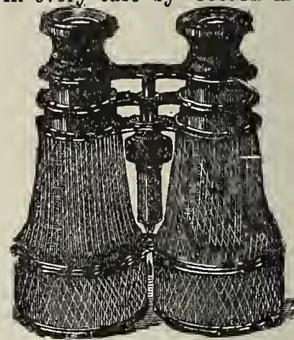

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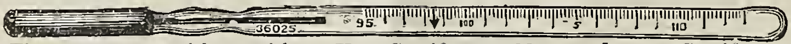

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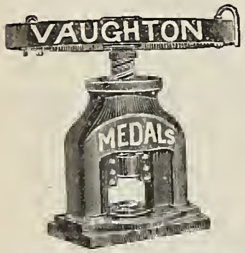

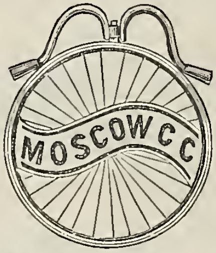

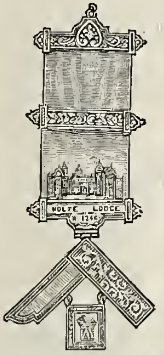

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The Diamond Fields.

(By Vaalite.)

In my last I pointed out the probable difficulty Mr. Wessels would experience in getting the rushers off the mine, despite the decision of the Courts. The dilly-dallying policy of the Government to some extent encouraged them to maintain their position. But subsequently a police-officer was sent to warn them to depart; he was met in the same quiet friendly manner by the rushers, who informed him they should do nothing until they had had the advice of their Association; and the advice this body afterwards gave was for the men to remain. A number of them were consequently summoned, and, after being lectured by the magistrate, and promising not to trespass again, were discharged. This only served to encourage the others, who remained resolute, and further meetings of the Association advised the men to remain on the mine. Seeing the law so disregarded, however, the authorities had others apprehended; and on arriving at the police-station it was felt necessary to show the power of the authorities by refusing bail. But difficulties and complications are not at an end even if these men had been punished and others prevented from going on. Some of the old complications in the form of rival claimants are being renewed. And, further, an order was made in Court that all diamonds found should be carefully kept account of, so that when the ultimate decision of the authorities was proclaimed, no one should be wronged. But when the rushers applied for permits to sell, they were absolutely refused; so that the whole of the finds had to go through the I.D.B.'s, and that the quantity was very large there can be no doubt, as I know men who were absolutely penniless when they started, but who kept a dozen of Kaffirs at work on the new mine, whom they had to pay at least fifteen shillings a week, and had to find cash for them too every week, or else not one of them would have continued work. It is therefore certain that the stuff was sold somehow or somewhere. What is to become of the mine is still a mystery. The great popular feeling seems to be that it ought to be thrown open, and Sir Thomas Upington has given notice of his intention to ask the Government to make inquiry regarding the opening of the mine. But past experience has shown that small claim-holders cannot work a mine long, or else it would never have been necessary to call the De Beers amalgamation into existence. There are, however, many facts to which we cannot afford to shut our eyes. One is that, despite the Wesselton finds, or the finds in other localities—about which I shall say something presently—the average price of diamonds was higher last year than it has been for a number of years. In the Kimberley division there were produced last year $2,415,655\frac{7}{8}$ carats, which realised £3,758,944, or over 31s. a carat, and this despite the output of other localities; the North East Bultfontein producing sometimes nearly 2,000 carats a week, for which, however, it is necessary to wash about 12,000 loads of material. I do not say they are washing this amount every week; last week they only washed 5,000 loads, which yielded 1,050 carats, which you will see are results not half so good as those claimed for the Wesselton, in which they have now reached a depth of 20 feet. Another diamond locality that is making quite a noise just now is in the Transvaal, about ninety miles from Kimberley, in the small village of Christiana, where some 70 or 80 prospectors are at work, and finding stones up to 14 carats each. The samples of diamonds which have been sent in from there are good enough to cause the formation of several syndicates, who are ordering and sending up the necessary machinery. I also hear some good accounts from the St. Augustine, which you are probably aware lies just off the main diamond mines; so that the vicissitudes of this mine have probably taken another turn for the better, which will be no more than some of its plucky adherents deserve. Of course there is no reason why the ground should not be as rich as in the other four mines, and the last information states they are now in good blue ground, altogether better and softer than that with which they have had to be satisfied for some time past. I might say that the formation of the pipe in this mine is somewhat different from all the other mines, for whereas in the other instance the pipe comes up with practically vertical walls, the whole of the interior—with one exception, that of the "snake-rock"—is solid blue; in this mine it is more in veins and pockets, and appears more like ordinary vein stuff than is the case in the other mines, so that frequently when they get on to a good piece of blue it either dips or dies out.

The Jagersfontein still keeps producing; the fineness of these stones are too well known to require pointing out; suffice to remark that the term has become an expression for ideal stones. During May they were able to turn out nearly eight thousand carats, which averaged thirty-two shillings a carat; but eight thousand carats of rough would not represent a very large portion of the stones that come into the market under the name of "Yargus."

The Cyrius Mine, of which I spoke in my last, is going on very promisingly; they are now working at a depth of fifty feet, and are more than satisfied with the results, the washings so far having proved it to be a very rich mine.

But, despite all this, facts are being brought forward which show unmistakably that there is a general fall in the value of property and obtainable rents, and that the district is certainly not in a flourishing condition.

Things at the New Gordon Mine are progressing very favourably. I think I sent you word of the lawsuit between the Gordon Company and the great De Beers, and its settlement; of the formation of the new company, and also of the arrival of Messrs. Lockhart & McClellan, who decided upon their methods of operation, and in the short space of time they have been at work they have obtained over 6,000 carats of diamonds. They have sunk a shaft over 300 feet, and hope to carry it down another 300, which they expect to yield 200,000 loads of blue. The new company has been registered here, and by cable we learn it has also been registered in London, and a very successful meeting held under the presidency of Sir Robert Harding.

In reply to the questions asked by Mr. Picton upon the hall-marking question, Sir M. Hicks-Beach said the matter was now under the consideration of the Standards Department of the Board of Trade, but he could make no promise as to presenting any report on the subject, or introducing a Bill for the abolition of compulsory hall-marking. He doubted if such a measure would be acceptable to the trade.

The same old trick. One Shoemacher, a jeweler of Brussels, was induced to take jewelry valued at about £8,000 to a house, and to entrust it to a manservant to show to his mistress. The property disappeared, together with the three members of the gang by whom the jeweler had been duped, and whom the police have traced to Holland.

A dinner, of a character that does not often occur, was celebrated at Kroll's Hotel, Minories, on the occasion of the wedding of Mr. Leorenzen, head of the firm of Johannsen & Co., the well-known chronometer makers; amongst those present being Messrs. Abbot, Burch, Bird, Claxton, Heyes, King, Marshall T. Travers, &c.

Watch and Clock Making.

(Continued from page 7.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

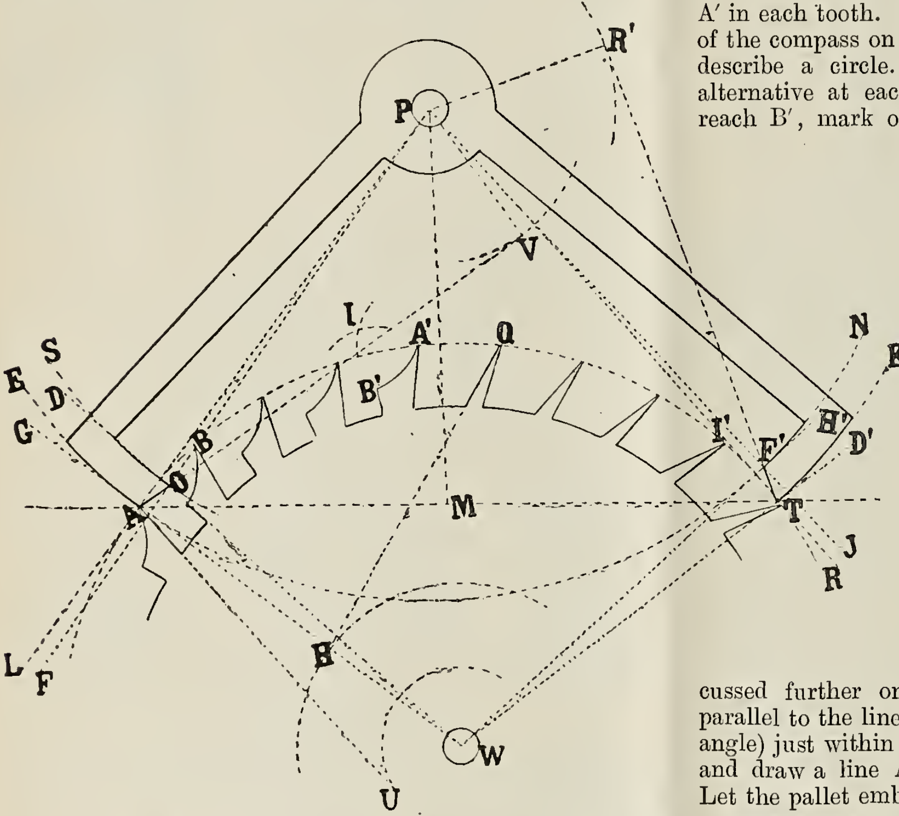
Director of the Polytechnic School of Watch and Clock Making.

(II.)—Advanced Paper, 1890.

QUESTION (6).—Show by a sketch (*a*) the usual forms of teeth and pallets in the Graham dead beat escapement. (*b*) Why is it preferable for use in the regulator clocks?

Answer.—First part (*a*) by following sketch.

(*b*)—It is preferable to any other form of frictional rest escapement [see (11) in (I.)] because there is a minimum disturbing force during the supplementary arc of the pendulum; but it is not a matter of sufficient experimental demonstration that it is superior to some forms of detached or gravity escapements.



Remarks.—The Fig. may be used for showing the methods both of theoretical and practical construction of these pallets.

1st. Theoretical Construction.—With a view to the correctness of the drawing, it is advisable to make it as large as convenient, say let the radius of the escape-wheel be six inches. It is not necessary to draw more than half of the wheel, so that half a sheet of good drawing paper pinned on to a corresponding drawing-board will be sufficient. Take any point near to one edge, and equidistant from the adjacent edges. Let this point be W.

Draw a straight line through this point parallel to the edge, and draw a semicircle upon it as a diameter. Divide the semicircle into fifteen parts, then each point thus found may be taken as the position of the acting edge of a tooth or its point. Draw any radius—say W A.

Place the centre of the protractor at A, and the edge parallel to A W, and mark off the angle U A W=12deg., then A U gives the direction of the face of each tooth. Place the centre of the compass on W, and open it till it reaches the line A U—that is the shortest distance of W from this line—and round centre W, and with this opening of the compass draw a circle. This circle will be the tangent circle to the directions of the faces of the teeth. That is to say, if the edge of a set square is so placed that from each point in the circle denoting the points of the teeth a line can be drawn touching this circle, the lines so drawn will all have the same inclination, hence the straight edge need only be moved from point to point on one side, and the other kept touching this circle; then each line so drawn is the position or locus of the face of a tooth. The depth of a tooth is about one-sixth of the radius.

The back of the tooth can be made either the shape as in B′ A′, or in Q. For dynamical reasons the latter is preferable, because it gives a lighter wheel, while it possesses ample strength [see (1) in (III.)] I see no reason why the first should be used except that it looks more pretty. If the student prefers to draw the first, determine the point B′, which, of course, must be the same distance from W and A′ in each tooth. This can be done thus: Place one foot of the compass on W, and open it to a distance W B′, and describe a circle. Then with one foot of the compass alternative at each point of a tooth, and an opening to reach B′, mark off all points denoting B′; then with A′ and B′ respectively as centres describe arcs, and let them cross each other; the point where they cross will be the centre round which the curve B′ A′ is described; that is point I. If the form is selected as in Q, then the back is simply drawn so as to give sufficient stability. Thus if Q H indicates the back, the circle of which W H is the radius is drawn, and then the backs of all the teeth are drawn in the exact manner as the faces of the teeth.

Next, we have to find the centre of the pallets. Let the pallets have equidistant locking arcs. (The reasons for preferring equidistant lockings to circular pallets, as well as those that should guide us in the selection of the number of spaces over which the pallets are to span, will be discussed further on.) Place one edge of the set square parallel to the line A W, and the other (bounding the right angle) just within the periphery of the points of the teeth, and draw a line A P, just touching the periphery at A. Let the pallet embrace nine spaces less 1deg. of drop.*

Draw a radius from W to the middle point between the teeth T and I′, and draw a line perpendicular to this, touching the periphery of the wheel at this point; where this line cuts the line A P is the centre of the pallets. If, now, the one foot of the compass is placed on P, and opened to A, and an arc described, this arc should pass through the middle point of T I′; if not, the point P is not sufficiently carefully determined, and must be corrected by trial, so that the arc in question passes through both these points. Part of this arc A E forms the locking arc on the engaging pallet, and part F′ N the locking arc on the disengaging pallet.

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* The angle that any radius of the wheel describes when a tooth becomes disengaged from one driving plane, and the next tooth for action moves on to one of the locking arcs of the pallet, is termed "angle of drop," or simply "drop," if the linear motion of the point of a tooth is considered. It is most important that the measure of this motion should be a minimum, for drop is not only waste of power, but it is power working for the destruction of the parts in action. The limit of its measure depends on two conditions, viz., delicacy of the teeth and accuracy of division for a given wheel, and inversely as the radii in wheels of different sizes, assuming that the locking penetration (that is the distance from the end of the locking arc where the tooth drops on) is the same, a measure which is virtually independent of the size of the escapement. Its correct measure should be made the subject of tables, but such work in our profession has to be done either gratuitously, or receives payment in "kicks"; hence the reason why the law that governs is principally "Rule of thumb."

We proceed now to form the driving planes A O and F′ T; first, A O. Let the impulse angle be 2deg.; that is, make the angle L P F = 2deg., by the same method as has been explained as regards setting off the angle U A W, that is, the inclination of the line F P should be 2deg. with the line L A P. Then set off the angle G W D, or what the same, A W D = 5deg., being the angle the wheel moves through in giving impulse.

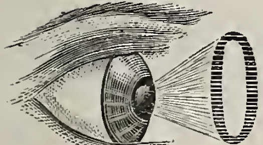
Place, again, one centre of the compass on P, and open it until the other (which, of course, carries the lead) coincides with the point where the line D W cuts the periphery of the wheel, and draw the arc S O. The point where this arc cuts the line F P is the delivery edge of the pallet. Join A O, and that line forms the driving plane, and part of the arc O S the inside of the engaging pallet.

Lastly, as to the disengaging pallet.

The position of the engaging pallet suggests that it is moving in the direction of the hands of a clock, and that impulse is just about commencing, hence the delivery edge at T has to dip into the periphery of the wheel to the exact measure of the locking penetration of the locking arc, as already explained. The angle H′ W D′ is again the escaping angle of the wheel, and the same as angle A W D. Draw a line from P to the point where W D′ cuts the periphery, and, to fix our ideas, mark off an angle of ¼deg. or ½deg. on the wheel side as the angle of penetration (I consider ¼deg. sufficient for clock escapements when the escape wheel is perfectly true; but as a margin against error ½deg. may perhaps be allowed).

(To be continued.)

The Trial of the Pyx.



Of all the old customs connected with the City, none, perhaps, is more important than this ancient one. Every year the Goldsmiths' Company are called upon to provide a jury to report upon the correctness of weight and fineness of the work of the Royal Mint. During the process of coin-making throughout the year, a certain number of each denomination is put into a box, called a pyx, as specified in the Coinage Act, 1870, for the pyx trial. These, from June 30 last year to the same date this year, amounted to 13,572 sovereigns and 776 half-sovereigns out of a total of £10,057,495. Out of the £1,435,357 silver coined, 1,184 crowns, 571 double florins, 1,966 half-crowns, 538 florins, 1,594 shillings, 1,003 sixpences, 2 fourpences, 395 threepences, 2 twopences, and 6 pence were put into the pyx. On the 8th of July the following gentlemen assembled at Goldsmiths' Hall, at ten o'clock a.m.: The Queen's Remembrancer, Mr. Geo. F. Pollock, attended by the senior officer of his department, Deputy Mint-Master the Hon. C. W. Fremantle, K.C.B.; Chief Clerk, Mr. E. Rigg; Superintendent of the Operative Department, Mr. R. A. Hill; the Chemist and Assayer of the Mint, Prof. W. C. Roberts-Austin, C.B., F.R.S.; Warden of the National Standard, Mr. H. J. Chancy; the Goldsmiths' Company being represented by Messrs. G. Matthey, G. Lambert, James Garrard, Sir Frederick Abel, Francis B. Thomas, Stewart Pixley, William Robinson, George Pite, Robert Ruthven Pym, and Robert Williams. The Queen's Remembrancer addressed the jurors upon the important function they were called upon to perform, and the jurors having been duly sworn to report if the moneys in the Pyx were "in weight and fineness according to the standard weights for weighing and testing the coins of the realm, and the standard trial plates of gold and silver used for determining the justness of the gold and silver coinage of the realm in the custody of the Board of Trade," they at once retired to their laboratory and commenced their work; first counting the coins, then critically assaying and weighing them. At 6.30 the Queen's Remembrancer again attended to receive their verdict, which was of an almost surprisingly satisfactory nature. In the evening the Prime Warden and Wardens of the Company entertained all the heads of the public department and those members of their staff who were associated in the operations of the day, also many distinguished visitors, including the Chancellor of the Exchequer, the Earl of Arran, Lord Cottesloe, the Bishop Designate of Lichfield, Sir John Mowbray, M.P., Mr. W. L. Jackson, M.P., Sir Thomas Blomfield, Sir Albert Woods, Sir Chas. Fremantle, Sir Reginald Welby, Sir John Coode Mr. Courtenay Boyle, C.B., Admiral Bythesea, &c., at the banquet.

Details of the figures at the mint will be given later on. Some idea of their extent can be gathered from the fact that in the melting department no less than 676½ tons of metal were cast into bars for coinage.

Extensive Swindles.

On Wednesday, the 15th ult., the greater part of Woolwich was in a state of excitement, owing to the disappearance of a staff-sergeant and steward of the Herbert Hospital. It was not so much his disappearance that caused the excitement perhaps, as the fact that before his departure he had obtained goods and money to a very large extent, by means of worthless or forged cheques, from a large number of the local tradesmen. From a local watchmaker he had obtained a gold watch and albert to the value of £45. The publican, the brewer, and anyone that he thought would change a cheque for him suffered alike as his victims. Nor did the excitement cease the next two days, when it was discovered that, before bidding adieu to the place where he had been so long and respected so highly, he had planned and successfully carried out a most extensive set of swindles. The method he adopted in most cases was to write to large houses for prices and particulars of gold watches, chronographs, or what not, stating that he was about to buy one. In most cases a representative was sent down to interview the applicant, and to submit a selection; but the gentleman with the be-medaled chest did not close the business on those occasions, but made appointments for the following Tuesday, which he faithfully kept. In all instances that have come to our notice the firms let him have the things he selected upon his cheque, as the circumstances of his position and surroundings would fully justify; as no one would for a moment imagine that he was leaving behind him such a position and prospects of pension after twenty years' service. In most instances the sums were fifties and sixties, and whenever he could he overdrew the cheque and took the balance. From a local tradesman he obtained a piano, drawing £10 balance; but the cheque in this instance was not in his name but drawn to his favor. It is this firm who have taken out the warrant for his apprehension, but with twenty-four hours start it may be a long time before he is caught, although it is said he is largely deficient with the mess money; and, if so, the Government may take up the case, which is certainly a remarkable one, as the offender had a large sum of deferred payment, and a pension coming to him. He also leaves behind him a wife and six children. There are other details connected with the case which we are unable to give.

The Crystallography of Gems.

By W. J. Lewis Abbott, F.G.S.

(*Continued from page 5.*)

The Trimetric System.—*Concluded.*

The Natural Forms of Olivine.

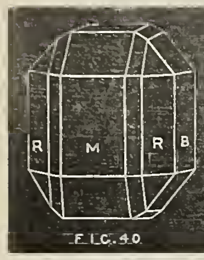


FIG. 40

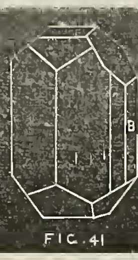


FIG. 41

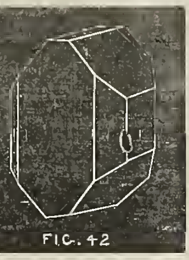


FIG. 42

THERE is probably no gem about which such confusion has existed as the chrysolite; by modern mineralogists the name is applied to the light varieties of Olivine, the darker pistachio greens being called peridots. The two gems are thus but varieties of the species Olivine. With the various gems that have from time to time received these two names, such as Brazilian chrysolite, or peridot, peridot of Ceylon, nor the names by which it has been called, such as Topazius (Plin), &c., we have nothing to do in the present series, belonging, as it does, to descriptive gemmology, and not to crystallography.

Although a volcanic product and often found in the matrix, crystals are somewhat rare; masses of olivine are now before me weighing upwards of a pound; but although they possess a regular outline, they are more like granular aggregations than crystals as represented in, say, topazes, with only here and there patches which are sufficiently transparent, clear, and good color to cut. It is such firmer pieces as these portions that resist attrition in water-wearing in rivers, and ultimately become small pebbles, in which condition this gem is most frequently found; still, however, good crystals are often to be seen with perfect outlines, as well as pseudomorphs after them, in minerals into which the olivine has become altered. Usually the crystals are rough-looking, the pyramidal faces frequently appearing as though they had been ground. In many respects the olivines resemble the chrysoberyls in outline, but there is usually—although not always—present a basal plane. There is not that apparent compression of forms noticeable in the other gems, and above all the twinning in those peculiar types is quite unknown. The prisms are hardly ever simple rhombic or rectangular, and are almost always doubly terminated. They are usually about a quarter as long again as wide, the other lateral direction being only slightly in excess—usually about a tenth. In a most symmetrical form such as fig. 40 we notice the two pyramids together are rather less than the length of the prism. This prism, it will be observed, has twelve sides or faces, each of which is followed by a pyramidal face. The faces lettered R are faces of the rhombic prism; that lettered M, with its opposite face, lie parallel to the macro-diagonal; and the one lettered B, with its opposite face, lie parallel to the brachy-diagonal axis. The other two small prismatic faces, with the two opposite them (not shown in the figure), bear a different relation to the two lateral axes from the faces of the two prisms with which we have been mainly dealing; they are an illustration of a third class of prismatic faces which differ in their interfacial angles, and which are frequently present in this gem. There is one feature about these third-class prisms not often noticed by crystallographers, and that is they are frequently developed on one side of the crystal and not on the other, giving rise to six and ten-sided prisms. Fig. 41 is an illustration of this. In this figure the two larger front faces are those of the rhombic prism meeting at a point, when it will be remembered they cut one of the lateral axes: if these two faces were continued to the right and left, and the corresponding pair at the back similarly continued, they would meet at points where they would cut the other lateral axis, forming a prism upon a rhomb; it will be noticed, however, that this is intercepted by the interposition of the face lettered B lying parallel to the brachy-diagonal axis. But between these and upon their adjoining edges we see another face, similar in position to the small faces in fig. 40, only with this peculiarity—viz., that it is not developed on the corresponding side of the crystal as it is in that figure.

Turning to the pyramids of this gem they usually occur double (top and bottom), they are rather low, forming an angle with the girdle of about 40deg. Sometimes every face upon the prism is followed by one in the same vertical zone in the pyramid, as in fig. 40; more frequently, however, such is not the case; sometimes, although there are all three classes of prism present, there is only one pair of prismatic faces, as in fig. 42, forming either a macro- or brachy-dome, with or without truncation by the basal plane. Sometimes an eight or twelve-sided prism is terminated by a four-sided pyramid, as shown in fig. 41, in which case only two planes coincide horizontally with the prismatic facets. At other times they are terminated by a four-sided rhombic pyramid, in which case they would all four coincide with planes in the prism. Sometimes these pyramidal faces are symmetrically developed, occurring on one side and not on the other. Sometimes we see a development of a pyramidal face on one side and a corresponding prismatic face on the other. Frequently—in fact, generally—the pyramidal faces are not evenly developed, those of the rhombic pyramid, say, being only represented by tiny little faces, whilst those of the other pyramid are absorbingly over-developed. There is no rule to determine the extent to which over-development of certain faces may take place, either in pyramids or prisms. The same may be said of the basal plane: it is usually present, but sometimes it is a mere square speck, at other times like a knife back running in either lateral direction, at others it occupies a very large area, its shape being determined by the number and size of the pyramidal faces.

(*To be continued.*)

The Diamond Eiffel tower has met with the fate that could only be expected to await it, viz.: it has been broken up, so that altogether it has not been a success, not having been finished soon enough for the Paris Exhibition. It was a remarkable undertaking, containing as it did 21,000 diamonds of an aggregate weight of 3,000 carats, some of which were two carat stones. It was knocked down for 220,000 francs.

At the last meeting of the shareholders of the Coventry Watch Movement Company attention was called to the dearth of skilled workmen in the watch trade. It was suggested by one of the shareholders of the company (Mr. J. G. Morrall) that manufacturers should combine to offer prizes for competition among the apprentices in the watch trade as an incentive to them to become skilled workmen. The suggestion met with the approval of those present, but unfortunately no steps were taken to give practical effect to it.

A Solar Turret Clock.—A very fine turret clock has recently been made by Mr. J. W. Benson for the palace of the Sultan of Turkey at Stamboul. It differs from any turret clock in this kingdom, in that one dial shows mean time, and the other Solar time; a curious compromise with civilisation, as although the Turks are anxious to avail themselves of all the benefits of Western progress, their religious rites are calculated by the sun.

Sheffield Notes.

(By our own Correspondent.)*

THE strike at the Cutlery Works of Messrs. George Walstenholme and Sons has terminated, and the men have gone in upon terms that are described as being mutually satisfactory to employers and employed. It is difficult to see, however, what the men can have gained, considering that they have been idle for some eight or nine weeks. Loudly proclaiming that 28s. per week meant starvation to themselves and families, they have yet managed to exist during the whole of that period on the meagre pittance doled out as sick pay by their union. Of all the strikes of recent times this has been the most insane. The fact is beyond question that the cutlery trade of the town during the past decade has remained stationary. While old firms in the electro-plate trade have been extending their borders, and new ones springing up on every side, the very reverse has been the experience of the old original staple trade of the town. Old firms have become extinct, and have not been replaced by new ones, while the old houses of world-wide reputation have just managed to hold their own. The keen competition of Germany and France has been responsible for this result, and the McKinley tariff seems to preclude any hope of an immediate improvement. Under these circumstances it is of vital importance that employers and employed should pull together, and whoever is in any way instrumental in setting them at loggerheads incurs a grave responsibility.

THE Cornish Place Dixons are a prolific race. Not long ago I had to chronicle the coming of age festivities of one of the younger members of the family. Now they have been celebrating the jubilee of Mr. H. J. Dixon, of Stumperlowe Hall, as a member of the firm of James Dixon and Sons. Just 50 years ago Mr. H. J. Dixon attained his majority, and was taken into partnership by his father, the founder of the firm. The workpeople employed at Cornish Place, to the number of 700, were entertained by Mr. Dixon at Stumperlowe Hall, and there presented him, as a memento of the occasion, with a handsome clock, and a splendid tea-service and tray in solid silver. The clock was Italian renaissance in design, and the tea-service and tray were elaborately and tastefully engraved. An illuminated address also formed part of the presentation. The whole affair was highly creditable both to employers and employed. Many of the latter had been in the service of the firm for over 50 years, one old artisan, who was unable to be present on account of illness, having completed his 65th year's service. It says much for the vitality of the silver trade of the town that the firm which originated it is still not only in existence, but has attained such vast dimensions.

THE news of the death of Alderman Osborn, Mayor of Sheffield, has been received with painful surprise by the whole community. Although for the greater part of his mayoralty in feeble health, he certainly was not expected to succumb on the eve of what was thought to be his complete restoration to health. Such, nevertheless, has been the case, and we have lost from our midst a citizen who was thoroughly respected in more than a conventional sense. The most prominent feature in his character was his sterling integrity. In the early part of his career as a manufacturer a series of reverses compelled Mr. Osborn to call his creditors together, and an offer on his part to buy back the business for 12s. 6d. in the pound was accepted with alacrity. It was considered an exceedingly good dividend as things were at that time. In less than 10 years, however, each of the surprised and gratified creditors received a cheque for the balance of his account. From that time all the operations of Mr. Osborn have prospered, and he has died, in point of wealth, one of the princes of the Iron and Steel industry.

THE difference between an ordinary newspaper and a technical journal is generally understood to be that the latter can be trusted to tell its story without the aid of any of those adventitious accessories which often render the reports of the former utterly worthless. The recent article in the *Lancet*, however, respecting the sanitary condition of Sheffield is scarcely characterised by the calm and dispassionate tone pertaining to the ordinary technical journal. Our medical contemporary has been sending down a special commissioner, who, taking for his text the recent influenza epidemic, has discoursed more eloquently than correctly upon health matters in general. When the commissioner talks about the panic which he says prevailed during the influenza visitation, every man in Sheffield knows that he is talking utter nonsense. Nor is it correct to say that the trade of the town was affected in any way by buyers from other towns being frightened away. Our producing powers were crippled for the time being, that was all. What he says about our ashpit system is doubtless true, but when, carried away by his own eloquence, he characterises Sheffield as one of the most unhealthy towns in the country, we rub our eyes and ask whether the figures of the Registrar General are worth anything at all? On the whole, we think they are, although they point to the conclusion that Sheffield is one of the most healthy, or, if you like it better, one of the least unhealthy of the large manufacturing towns in the country. Therefore, although it is quite right on the part of "Our Commissioner" to put his finger on the weak points in our sanitary system, he should remember that, as Justice Shallow would say, "comparisons are odorous," and he should abstain from pointing his moral and adorning his tale by making statements which he would find considerable difficulty in substantiating.

THE phenomenal growth of many of the silver and electro-plate firms of the town has been more than once alluded to in these notes. The extension of Walker and Hall's premises in the direction of Cadman-lane is rapidly approaching completion. Five years ago had any new factory been built with the working capacity of this extension it would have taken its place at once in the first class. Now, however, this addition excites very little remark. In connection with these continual extensions, the company deem it necessary to have an elaborate system of wires running through the whole factory, and connected with a sort of tell-tale clock, which, by an ingenious contrivance, registers any dereliction of duty on the part of the night watchman in making his rounds.

TRADE would be rather flat at present in the silver trade were it not for the new patterns which most firms are energetically turning out. A teaspoon is individually a small object, but some new ideas in that line, which are being evolved by Messrs. Round and Son, are being instrumental in providing profitable employment to a great number of deserving people. These spoons are decorated with the "National Emblems," and are selling in large quantities. It is found that Scotchmen find tea stirred with a spoon bearing the similitude of a thistle more soothing to their nerves than the same beverage agitated with the old

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

"fiddle" pattern. In like manner Irishmen largely affect the shamrock, the harp, and even the round tower in their five o'clock accessories. This is not exactly high art, but it "takes," and that is what is wanted in the dull season. If you want something nobler, O æsthetic visitor! walk into the showroom, where you will find art enough, and to spare. In the meantime cases of the new spoons are being produced in sufficient numbers to hinder managers from obtaining their much-needed rest at the seaside, which fact may be taken to represent the proverbial fly in the pot of ointment.

The Sheffield Chamber of Commerce has by special resolution expressed its disappointment with the decision of the Parliamentary Committee in the matter of the rejection of the Sheffield Company's contemplated extension to London. A strong feeling seemed to exist among the members, that the local opinion of a London residential suburb should not be allowed to override the vast interests involved in the scheme to such communities as Sheffield. Of course we can all see that there is something to be said on the other side. If a proposal were made to run a railway cutting through our own suburb of Ranmoor, it is pretty safe to say that the individual members of our Chamber of Commerce would oppose it to the death. Nevertheless, we are certain sooner or later to get our new line to London.

On the other hand, the Chamber entered heartily into the proposal to hold a special meeting of the Chambers of Commerce of the Empire in London next year. The proposed codification of the Commercial Law of the Empire may appear too Utopian an idea at present, but if anything could be done towards the assimilation of the law relating to Trade Marks throughout the British Dominions, it would be a great boon to Sheffield.

Notes from Abroad.

It is difficult to realize that, while we blush to think of the hours that shops in this country used to be kept open, the New York jewelry trade have agreed to close on Saturday mid-day; and the leading jewelers of Savannah, Ga., and elsewhere at six all the week until October. The larger firms in the jewelry and kindred trades in Chicago have also agreed to close their houses of business at half-past five every week day except Saturday, when they close at one o'clock. The early closing movement will be in force from June to September.

* * *

That London is not the only place in which high rents are paid is evinced by the fact that a Chicago jewelry house has just rented a building for twenty years for 460,000dols., or 38,000dols. per year!

* * *

The other day the Elgin Watch Company paid duty on a small parcel of rubies and diamonds to be employed in jewelling watches to the tune of 150,000dols. We have this on good authority, but it is difficult to realize the truth of it.

* * *

According to a report submitted at the last annual meeting of the American Society of Civil Engineers, at the commencement of 1890 the twenty-four hour notation was in use on less than 4,000 miles of railway, but before the year closed it was permanently adopted on more than 20,000 miles, and there is even a prospect of its adoption on all lines.

In Canada a bill has also been proposed to legalize the adopted reforms of time-reckoning, and the British Government has forwarded to Colonial Governments a recommendation to adopt the hour zone system and twenty-four hour notation for railway time.

* * *

The amount of silver now stored up in the great Treasury Vault at Washington amounts to something like 4,000 tons, representing 90,000,000 of dollars. In another vault there is two-thirds of this quantity also stored away.

* * *

The late Mr. W. F. Tompkins, manager to the Seth Thomas Clock Company, is credited with having amassed a fortune of 200,000dols.

* * *

A St. Louis house paid duty recently on 40,000dols. of gems. This is claimed to be the largest amount ever passed through the St. Louis Customs House.

* * *

Rockford, Ill., is to have another watch factory, with a capital of 250,000dols. It is expected to be in active manufacturing operation by September next.

* * *

A small demagnetizer of watches is now being sold in America, which is portable and easy of use. It consists of four Le Clanché cells which generate the current, which is transmitted to a pair of small coils. Upon an arm parallel with the coils, and immediately in front of them, is a spindle working on a screw thread. The watch is placed in a receiver, and on turning the spindle by a bow or otherwise the watch is made to rotate in front of the magnets, and to advance and recede in the operation. The price at which this instrument is sold is 25dols. complete.

* * *

Young Duncan, the youth who, it will be remembered, absconded with thirty thousand dollars' worth of diamonds from Lewison & Co. of New York, in January last, has been run to ground. He applied for the parcel which contained the majority of the stones at the Astor House, where he left them the day after the robbery, in which place the contents of the parcel were discovered through their bad packing. He has now been sentenced to four years and five months' imprisonment in the penitentiary. After receiving the sentence he walked away with a jaunty air. One of the most remarkable things connected with this youth's career was that he got clean away and sailed to Lisbon; here he met with Mr. Colbron and Mr. Davis of Boston, and to the latter he gave the brass check he had received from the Astor House for the diamonds he had left there in an old sock, asking Mr. Davis to get them forwarded to an address he gave in Tangiers, which Mr. Davis agreed to do. The latter then in company with Mr. Colbron took passage for home on the steamship Utopia, which, it may be remembered, came in collision off Gibraltar with a British vessel and sunk, Mr. Davis and all his possessions going to the bottom. Mr. Colbron, who was saved, managed to get back his trunk after three days' searching by the diver. In it was found the brass check, which Mr. Colbron sent to the American Consul to be forwarded to Duncan at Tangiers.

The annual picnic of the Liverpool Watchmakers and Jewelers' Association will come off at Harecastle on the 3rd inst. Messrs. R. Neville, M.P., R. C. Oldfield, W. J. Blunt, Newcomb Bros., and others have given presents for the sports. At the last monthly meeting of this association, presided over by Mr. John Bryant, a lengthy discussion took place on the recent cases of breaches of the plate licence.

Birmingham Notes.

(By our own Correspondent.)*

FROM Mr. W. H. Brown, jun., of 38, Spencer-street, Birmingham, is to be obtained an ingenious contrivance, called the united pendant and watch key. The key is attached to the charm at the end of the chain, consequently it can never become lost or mislaid. The patent climax watch key is a somewhat similar contrivance intended to answer the same purpose, differing only in that the key is attached to the chain close to the swivel in such a way as to admit of the watch being wound without detaching the key from the chain.

IT may seem premature to talk of Christmas trade yet, but it may be remembered that as early as the latter part of August, or certainly the beginning of September last year, orders for Christmas things were being taken, and the first in the field appeared to share the best. But, of course, jewelry stock is not a thing that one can accumulate for a future market to the extent that many things can be, as it soon becomes very heavy, and refiners' bills are not very long lived.

AMONGST the firms we have recently visited, and had opportunities of seeing what is being turned out, we might refer to the old establishment of Messrs. Horace Woodward and Co. The quiet, select, high-class old connection nature of this business does not, perhaps, bring it so prominently before the general trade as some; but I am pleased to find that the same artistic high-class goods are still being manufactured here for west-end houses, for the production of which London has always had the credit. I was also glad to see that, unlike many of the old houses, they do not run entirely in the old ruts, but here may be seen a charming assortment of silver novelties, down to quite small things, which, I suppose I may be allowed to say, I remember the time when they would not have thought of making. So much, however, for realizing the spirit of the age, and keeping ones selves abreast of what is being wanted. With all the ability of this firm brought to bear upon any necessity, one who knows them can well imagine what the result has been, and those of our readers less familiar with them had better lose no time in paying them a visit.

ONE of the most varied stocks that one can wander amongst is that of Messrs. I. S. Greenberg and Co. The low-priced stuff is really remarkable; to think of a Hall-marked 9-carat signet at 24s. a dozen, or ladies' rings of the same class set with real stones for 30s. a dozen, tempts one to wonder what those who make them get. The same may be said of Hall-marked silver alberts at 5s. an ounce. These are things where the prices are obviously cut, but there are hundreds of others, which, upon inquiry, turn out just as cheap.

MESSRS. GINDER still continue to produce new and taking designs in rings. No one can pass through a half-dozen London streets without noticing how much greater stock of rings everyone keeps now, and the large quantity of fancy designs that may now be seen.

I WAS recently very much pleased with a number of the latest arrivals to the stock of Mr. A. Sydenham. Many of the brooches are quite marvels. He seems at the present time to be giving a great deal of attention to silver badges, some four or five hundred of which we saw.

MESSRS. MANDER AND CO., of Spon End, Coventry, have found it necessary to extend their establishment. The facility to deal with a fast increasing business will thus be greater. Every possible requirement can be furnished by this firm, and it is a noteworthy fact that orders are sent for watch materials, etc., from all parts of the world. If Messrs. Mander's customers were so well satisfied before, what, in view of the extensive alterations, will they be now?

GOVERNMENT REPORT ON THE BIRMINGHAM SCHOOL OF ART.

ALL our readers will peruse with pleasure the report of Mr. Gilbert R. Redgave in the thirty-eighth report of the Department of Science and Art of the Committee of the Council on Education, on the work of the above School of Art:—"This is a most interesting and successful school. It is an extension of the work begun in the Ellen-street Branch School. By an arrangement with the Birmingham Jewelers' and Silversmiths' Association the employees of members of these trades are collected here for instruction not only in drawing and designing, but also in the technical work of the trade—enamelling, engraving, chasing, embossing, filagree work, and other branches. The School of Art work, on the ground floor, under Mr. Taylor and his staff, is specialised so as to have direct reference to the trade, and the boys are encouraged, as soon as they can draw, to turn their attention to designing. Some very fair designs were in progress for ornamental treatments to fill given spaces. There is also a class of about twenty engaged in modelling. Both the teachers are practically employed in jewelers' work. Mr. Steeley, the head master, has been trained also at South Kensington, and has worked at the bench at Bragg's factory. The Jewelers' Society have drafted a special form of indenture for their apprentices, binding them to attend this school. They also allow them to quit work half an hour earlier for the purpose. The school authorities send a monthly report to each firm, with a list of the boys in attendance, indicating the number of times they attended, and the days on which they were absent. These reports go out to some seventy firms. This school is situated at Hockley, in the centre of the jewelers' quarters, and the Associations, both of masters and workmen, have taken part in the movement. There are upwards of 320 names on the books, all practically engaged in these trades. On an upper floor is the Technical School, which is under the special direction and control of the trade society, and is leased by them from the Museum and School of Art Committee. This school is provided with rolling and wire-drawing plant and muffles and enamel-kiln. There are three teachers, skilled workmen (the chaser comes from Messrs. Elkington, and is a son of one of their best artists—Cope). The teacher of enamelling, Mr. Slater, is also an expert artificer. The room is fitted with benches, lenses, and all the necessary tools for forty students working at once. The school is open five days a week, from 6.30 to 8.0 p.m. Half the fee of 3s. is paid by the association and half by the student's employer. It is intended that a student taking the full course shall practise in turn at each kind of work, and thus learn which branch he is best adapted for. This would be quite impossible in a factory. This is, I think, the first instance in which a School of Art has been worked in conjunction with a technical school."

ONCE more the names of Thompson and Vine are associated, but with a transposition, it now being Vine and Thompson, under which name the well-known old firm will continue their business.

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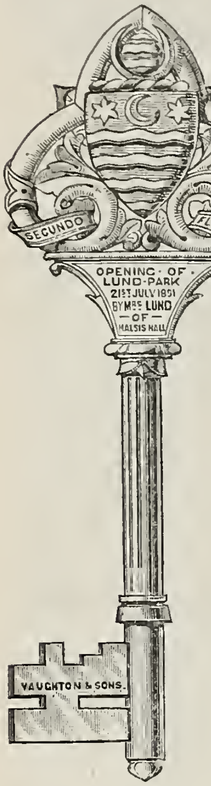
* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent.

Things New or Noteworthy.


SECUNDO
FLUMINE
OPENING · OF · LUND-PARK 21ST JULY 1891 BY MRS LUND — OF — MALSIS HALL
VAUGHTON & SONS.

The accompanying illustration represents the key made by Messrs. P. Vaughton and Sons, Gothic Works, Birmingham, for the opening of Lund Park, Keighley. It is made of solid 18-carat gold, and is designed and carried out in the Renaissance style. Upon the obverse are the Arms, Crest, and Motto of James Lund, Esq., D.L., J.P. (the donor of the park), emblazoned in correct heraldic colors. The ribbon bearing the motto in gold letters on an enamelled ground is entwined with the Renaissance scrolls on either side. On the reverse of the head of the key the arms and crest of the Borough of Keighley appear enamelled in heraldic colors. The head of the key rests on an escutcheon - shaped support, bearing on one side the following inscription: Borough of Keighley. Opening of Lund Park, 21st July, 1891, by Mrs. Lund, of Malsis Hall; and on the other side: Presented by William Weatherhead, ex-Mayor of Keighley, in Commemoration of the gift of the Park by James Lund, Esq., J.P. and D.L., in the year 1889.

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Our readers will be pleased to have noticed that Messrs. John Round and Son are the first in the field with the souvenir spoons. We hear on all sides that these spoons are selling well, and, as we pointed out some months ago, it is not so much the spoons, but the other trade they bring that makes them so desirable for everyone to keep.

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When we see the profuse display of wedding and keeper rings made by the many retail jewelers it might sometimes be wondered how far weddings and engagements are influenced by such exhibitions, and how many successful businesses have been built upon such hymeneal foundations. It may be that the jeweler in making so much effort to cultivate this branch of his business recognises its extreme importance, for undoubtedly the most romantic period of one's life is the few days preceding that of the wedding. And of all places most reverently remembered, perhaps next only to the church, is the shop where the wedding and keeper rings were purchased; and the shopkeeper is most heartily to be commended who successfully makes the highest bid for this custom. For what a large association does he enter upon! He secures customers at the most impressionable period of their lives; and it is thus that trade connections are formed which exist perhaps through life. A charm hangs over his shop, and upon every possible acquaintance the purchasers of the rings are glad to renew their acquaintance with the affable trader. Wedding presents, a present to the husband, a present to the wife, birthday presents, articles for the household, and a hundred and one other purchases follow in the train of the wedding and keeper ring sale. We have many times thus reflected, and, with some pain, have noted that however aspiring the shopkeeper may be, very few are able to attract the amount of attention they would like to the sacred ring (owing to the very bad show stands), while the commotion often caused by the disarrangement of the window when a purchase is being made is such as to cause to a nervous couple, such as an expectant bride and bridegroom usually are, considerable embarrassment, True, the shopkeeper is not altogether to blame for such a state of things, for beyond making a poor show on a few curiously constructed rods or in an antique saucer, little further is done. Recognising this, the old-established firm of Messrs. William Griffith and Sons, Manufacturing Jewelers, 35, Northampton-street, Birmingham, have just completed and registered two "Universal" stands for wedding and keeper rings respectively, composed of pure white aluminum metal and ormolu. The designs for the stands being singularly appropriate to the general sentiment attached to each ring, we feel justified in saying they are the finest stands ever produced for the purpose of increasing sales in this direction. They are at once in their material, workmanship, simplicity, and cheapness exceedingly attractive ornaments, and an absolute necessity to all jewelers desirous of extending their business. We understand Messrs. William Griffith and Sons have printed illustrations, which we would advise intending purchasers to apply for, as the stands will unquestionably create a very large demand.

Clocks and Death.

The sentimental and superstitious who are given to tracing the laws of coincidences will find an interesting subject for their attention in the recent death of a jeweler in Bucyrus, Ohio. For many years it has been the office of a skilful German watchman, named Frank Kehrer, to attend to the town clock. During the past few months the health of Mr. Kehrer has been poor, and the clock, deprived of his careful attention, has been keeping indifferent time. One Monday morning recently the timepiece struck 5, and a few moments later it stopped. Early risers who heard the chime affirm that there was something indescribably weird and peculiar about it. Later risers, noticing the clock hands pointing to 5.05, commented upon the subject and its aged guardian. Later in the day the news spread that Mr. Kehrer's condition had suddenly become worse and that he had died at 5.05 that morning. When the late State Senator B. J. Smith, of Hancock County, West Virginia, passed away, his family looked at his watch to see the time. The hands pointed to 12.02 o'clock. When S. G. Smith, son of the senator, began housekeeping in Wheeling, his father gave him a family clock which he had always attended to himself. After the funeral Mr. Smith returned to Wheeling. As soon as he saw the clock, Mr. Smith turned to his mother and sister and asked them if anything in the room had attracted their attention. "The clock," said the sister, and the mother nodded assent. The clock had stopped at 12.02.—*American Manufacturing Jeweller.*

Mr. Charles Vales, connected with the trade in London, died a few days since at the age of forty, from poisoning, and it is as yet unknown how he came to take the poison. Before dying he made a statement to the effect that Mme. Le Maout, whose husband is a chemist in Wardour-street, sold him the poison in a packet of Epsom salts. At the inquest both M. and Mme. Le Maout denied that Epsom salts had been sold at all on the day mentioned in the statement, and the jury returned a verdict to the effect that the "deceased died from strychnine poisoning, but that there was no evidence to show how it was administered." This ought to be cleared up.

The Jewelers and Silversmiths play a game of cricket at Neasden the Tuesday after Bank Holiday.

Our Unwrought Materials.

New Localities for Turquoise.

We have recently seen specimens of turquoise from a new locality—on the other side of New Mexico—to that in which it has been previously known to occur. The specimens we saw are in a light and dark breccia, somewhat decomposed, and resembling very much the matrix at Los Cerillos. In certain places the angularity and isolation of the turquoise in the matrix would suggest its forming only a constituent element in the breccia, or replacing some other mineral that did, as there is no sign of bedding. Mr. Charles H. Snow has also recently described some old turquoise workings in this same locality, which are now being looked after with renewed vigor. Usually, however, that found is not of a very good color. We know someone who is now out there prospecting for it, and hope to publish the fruits of his labors when they are known.

Large Gold Nuggets.

The last mail from the Western Australian gold-fields brings word of further finds of large size nuggets of gold, one weighing 92 oz. There therefore seems great promise for this district, which is attracting attention from older fields in the east; whilst good luck seems also to have turned to the Queensland mines.

Imports of Gold from South Africa.

During the month of June, South Africa, or—as some would prefer to call it—the Land of Sheba, sent to us £251,383 worth of gold.

Output of Gold and Silver.

There were 677,632 oz. of gold and 6,854,000 oz. of silver employed in the United States for manufacturing purposes during last year. The total of the world's production for the corresponding period is estimated at 5,719,500 oz. of gold, and silver 132,680,000 oz. An increase of over twelve per cent. in the output of gold in ten years, and nearly an increase of a hundred per cent. in the silver. It is interesting to know that the British Isles have sometimes contributed four figures to the amount of gold, and it is also lamentable to realise that at least one or even two more might be added, if gold mining were assisted instead of hampered by the laws of the country.

A cable from the Witwatersrand announces 55,863 oz. as the net amount of gold gained during the month of June. This is nearly, although not the highest output for any one month.

Stephanite.

A company is about to be formed with £150,000 capital, to treat iron and steel with a new flux, called Stephanite, after the name of its discoverer. It contains about seventy per cent. of alumina, being largely composed of alumina and emery. It is said that the metal comes from the furnace in a more liquid state under this process than by any other; and that owing to the length of time it retains its temperature, no blow-holes are formed, and a more homogeneous structure is produced.

The Ceylon Pearl Fishery.

The Ceylon Fisheries for this year have been very successful, and will leave the Government a profit of over eight hundred thousand rupees, the gross takings being nine hundred and sixty thousand rupees, while the expenses, &c., do not amount to more than one hundred thousand. It is curious how these spoils of the pearl fishery are disposed of, and for a long while they presented the Government with an insoluble problem. At last, however, taking advantage of the native inborn element of the love of gambling, in any shape or form, in the Orients, they decided that the pearl bearers should be brought to land unopened, shot in heaps, and then sold by auction. As on an average, perhaps not more than one in fifty contain a pearl, and not more than one in a hundred of these are of any size, it is evident what a field for gambling thus lies open. After the sales are over, the stinking shells are opened and searched with fervid avidity, the whole congregation very much resembling that polyglot assemblage described in Acts ii.; a whole change comes over the scene: here a Cingalese is rejoicing over his bargain and good luck, there is an Arab frantic with grief at his losses. Bargain-hunting Jews, who have not sufficient speculation in them to buy the shells unopened, are now trying to make the best of a deal with the more fortunate speculators; whilst a general stampede is going on to all quarters of the surrounding country.

New Montana Stones.

Amongst the stones which are now being unearthed by gem-hunters in Montana are some of whose nature there is at present a little doubt, and of which we are not at present able to speak with any certainty. One thing, however, is certain, that if there is anything peculiar in them we are in the position to obtain the full description. They appear to approach diamonds, and are even called diamonds by some, while others call them carbons. It is claimed that they are very nearly as hard as the diamond (or rather carbonado) used in diamond drilling, and there are feats claimed for them connected with that purpose which no diamond could perform, which point to their being carbonado similar to that of Brazil, so that the region may not, after all, possess a true diamond.

More New Diamond Localities.

It is said a company is forming with $1,000,000 capital, and with a large sum already subscribed, to mine for gold and diamonds at Volcano, Amador Co., California. Offices are taken and the names of the incorporators are published.

Moscow Opals.

The Opal Mines of Moscow, U.S.A., to which we referred a short time back, are yielding surprisingly; two men are at work in a shaft from which they obtain sometimes over a hundred carats a day of exceptionally fine quality.

Refractory Gold Ores.

There are several new processes now coming forward for the treatment of refractory ores, owing partially to the success of the MacArthur-Forrest process; one of which, the Atkins method, has some rather new features, being partially electolytic and partially amalgamating. It is claimed that the process can recover ninety per cent. of gold present, and that it can treat a ton of ore in an hour at a cost of ten shillings, practically always using the same water, a feature often of considerable importance.

Rich Discoveries of Antimony.

News is just to hand of the discovery of large quantities of this useful and by no means plentiful metal in Inyo County, California. At the present the places where this valuable metal is found are very limited, and, with the increased consumption for type metal, had not a fresh supply been discovered soon there can be no doubt that its price would have run up, which would have been of great importance to a section of the trade, as antimony forms a large proportion of Britannia metal.

Items of Interest.

Decline in British Trade. THE Vice-Consul of Seville calls attention to the fact that the imports into that country from Great Britain have decreased during the last year £136,000, whilst those from France and other countries have largely increased. One of the factors in which he attributes to the other nations quoting in the currency of the country, duty paid, is so much per kilogramme, metre, litre, &c., instead of £ per cwts., yard, gallon, &c. It is surely high time that a universal system of weights and measures, understood alike by neighbouring townsmen at home and foreigners abroad, was adopted.

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Outlets for Merchandise. The development of trade in several of the Eastern countries ought to be watched carefully by all members of our trades. Last year the Japanese imported about £35,000 worth of clocks, half the quantity of jewelry, and watches to the extent of £116,213, the whole of their imports from Great Britain being over £3,500,000.

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The Watch Trade and Spain. Some figures and remarks which may be put to practical use can be taken from the report of the French Consul at Barcelona in connection with the watch trade. He says there are numerous houses engaged in this trade. At present Switzerland has a monopoly by means of depôts established at Barcelona and Madrid, who send out travellers to the provinces. It is, however, essential to study the Spanish taste, which differs in the North and South. Usually a large watch is most liked; the Besançon watches are regarded as being too flat. The standard for gold is almost 18c. with a few 14c. and for silver ·800. A "Control," although existing, is not obligatory, the manufacturer's mark usually sufficing. Red gold is preferred. Silver hunters 18 to 24 lines. Ladies' ditto are usually 13 lines; gold hunters 19, 20, and 21 lines, and ladies' ditto 10, 13, and 14 lines. A few open-face silver, and many metal and steel run from 13 to 20 lines, hunters being preferred in all better watches.

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The Watch Trade in Austro-Hungary. According to the French Consul at Trieste articles of gold and silver on entering Austria are tested, after which they are stamped. The standards required in gold for watches are 18c. and 14c, The Control taxes are 50fl. per kilog. for gold, and 12fl. per kilog. for silver, both net weight. Yellow gold is mostly sought in 18c., while 14c. is divided between yellow and red. Ladies' are usually 13 and 14 lines in size, men's 18, 19, and 20 lines, hunters being preferred to O.F. At Budapest the minimum legal standard for gold and silver employed in watches is ·580. The Control levy a tax at the rate of 20fl. per kilog. for gold, and 3fl. per kilog. for silver, yellow gold and hunters being preferred. Men's sizes are usually 18 and 19 lines, and ladies' 12, 13, and 14 lines. English, by the way, is but little spoken here.

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Heraldic Exhibition at Edinburgh. Visitors to the North may be glad to have the opportunity of visiting a remarkably interesting exhibition of heraldry, now to be seen at the Edinburgh Exhibition, which for variety of coloring, and quaintness of style and artistic blendings, might never be seen again. The contributions have been made by a large number of gentlemen, amongst whom is Mr. Fred. A. Crisp, well known in the trade as a connoisseur of old English plate. Amongst others, notice might be made of a remarkable specimen of heraldic blazonry, the grant of arms to the Tallow Chandlers' Company, of London, 1454, predating the earliest Scottish grant by over a hundred years. As might be expected, the exhibit covers a lot of ground connected with the remarkable and almost mystic science of heraldry, including heraldic costumes, tabards, Knightly decorations, &c., numbering some 1,200 articles. There is also a fine collection of heraldic literature published previous to 1750.

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Old Silver Plate. Speaking of Mr. Crisp reminds us of a new two-volume work that has just been published from the pen of the Rev. Andrew Trollope, M.A., containing "an Inventory of the Church plate of Leicestershire," a task over which the reverend gentleman has labored for more than six years. There are six pieces enumerated which predate the Reformation, and were fortunate enough to escape destruction, viz., four patens and a cup, the latter now used as a chalice, but probably made for a pyx, bears the London Hall Marks for the years 1512 and 1513, which are to be found at Wymeswold. At Blaston, St. Giles, probably the oldest chalice is to be found, being supposed to be some twelve years earlier. There is another remarkable mediæval chalice existing at Laund Abbey of foreign origin. Subsequent reigns are also well represented, especially the Elizabethan. The work gives thirty-three plates of illustrations, and much valuable and useful information connected with Church plate.

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Who Pays Duties? Imposers of import duties usually forget who it is have to pay the import duties, and the effect the imposition has of raising the price, not only of luxuries, but of what is indispensable in ordinary life. A capital instance of this is afforded in the case of silver tissue paper. Sleek as the American inventor is, for twenty-five years he has been endeavouring to produce such an article as Messrs. Robert Fletcher and Son produce, but without the least success. Now the foresighted policy of the McKinley Tariff provides a duty of eight cents. per lb. and 15 per cent. "advalorem." This has sent up the imported article nearly fifty per cent.; although the jewelers declare that if it cost four times the money, they would not be without it.

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Early Closing. In many districts we are glad to see a movement is being successfully carried out to ensure at least one day per week early closing. In some localities it is two o'clock. In places with which we are familiar every shop of every description closes at that hour, showing that the only thing needful for such a blessing is unity of action.

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The German Watch and Jewelry Trade. It appears that England is not the only place where the imports from Germany in our special lines are on the increase. From the last issue of the German trade archives, it appears the increase in German clocks was 6,500, and also that jewelry to the value of four and a quarter million francs were imported from Germany into Switzerland.

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What is an Optician? Our contemporary the *Optician* lately called attention to the fact that the chemists and druggists are encroaching on the province of the optician's business to a greater extent than ever. A very large portion of the spectacle trade in many small towns is done by the local chemist. "This is, perhaps, of little direct importance to wholesale and manufacturing houses, but it is a lesson to the retail optician not to flag in the study of his own science, and to duly impress his possession of this knowledge upon the public. He must also cultivate the acquaintance of the local medical men and hospitals, for chemists and druggists have the greatest facilities for getting the thin edge of the wedge in here. Many retail opticians would be surprised at the amount of business influenced by the exhibition of raw goods in their windows. Nearly all the wholesale houses supply cards showing 'the different processes employed in the manufacture of our spectacles.' Such a card favourably impresses the public. We have seen as many as a dozen people at a time standing before a retail optician's window in a busy thoroughfare, in which was displayed a piece of 'rock crystal' with a knife-blade standing in an incision, 'showing the method by which our axis pebbles are slit.' Anything of this kind attracts notice, and it goes without saying that the first business of a show-window is to attract attention—the rest will follow." Nor are the druggists alone in this. One often sees optical goods in the windows of oilmen, stationers, ironmongers, brokers, and many other shopkeepers; and we think it is high time the danger of allowing unqualified men to tamper with the precious eyesight should receive official attention. The sooner a motion is set on foot, the same as in France, that no one shall prescribe spectacles (any more than medicine) without being duly qualified, the better for all concerned.

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Horological Ingenuity. In an Essex village of some two to three thousand inhabitants, in a flourishing condition, chiefly engaged in the oyster fisheries, of which savory morsels it produces the finest in the world, there was not, at the time of which we speak, a professional watchmaker. When the squire's clock went wrong, or the labourer's watch got damaged, they were taken to an oyster dredger, whose ingenuity had early evidenced itself in the making a peep-show, and culminated in the art and science of watch and clock repairing and cleaning. We remember asking him how he repaired a broken spring, to which he replied, "Sometimes I so'der 'em, sometimes I rivet 'em, and sometimes dovetail 'em." We have often thought of the ingenuity this man must have employed; but lately several cases have come to our notice that entirely eclipses this. A gentleman who was travelling in the interior of Japan broke the mainspring of his watch, which he took to the nearest jeweler, a native who lived in an obscure mountain village. Somewhat to his surprise the watch was returned to him apparently in as good running order as ever, and ran all right until the rainy season set in, when it stopped. Being in the city of Tokio at that time, he took the watch to an English workman, who, on making examination, was astonished to find that the cunning Jap had put in a spring made of bamboo, which, so long as it was kept dry, remained elastic, but during the wet weather had gathered dampness and lost its power. A far more ingenious thing is reported of a prisoner at Kariaus, Bohemia, who it is said has constructed a watch with no other tools or material than two needles, a spool of thread, a newspaper, and some rye straw; the wheels, posts, and cogs are made of rye straw and thread, and it is said it goes for six hours.

Owing to failing health Mr. James Bracebridge is retiring from the business which he has carried on for many years as watch manufacturer in Clerkenwell, under the style of E. C. Bracebridge and Co. Mr. Bracebridge has appointed his nephew, Mr. F. Bracebridge Mills, to settle his affairs. There is, we believe, some likelihood that Mr. T. D. Wright, who for many years has held the post of manager to Mr. Bracebridge, will continue the business, and in this event there is no doubt that the reputation the firm has long enjoyed will be fully maintained in Mr. Wright's hands.

Recently a Baldred of Kent silver penny realised £25 at Messrs. Southeby, Wilkinson, and Hodge's.

France and Spain have just agreed upon their gold coinage being an international legal tender.

The ladies' committee for the Princess Mary Silver Wedding presentation have selected a three-row pearl necklace.

The Markets.

BOARD OF TRADE RETURNS.

The Board of Trade Returns for the United Kingdom for the month ending June 30th are as follows:—

CLOCKS.

Imports.	1891.	1890.	1889.
From France	£12,519	£13,808	£13,418
„ United States	£8,789	£8,581	£6,143
„ Other Countries	£17,676	£18,059	£13,352

Showing a decrease of £1,464.

WATCHES.

	1891.	1890.	1889.
Total amount in June	£49,774	£63,844	£51,991

Total decrease, £14,070.

DIAMONDS.

During the month there has been little alteration in the prices of diamonds. We have, however, seen several large parcels of mêlée offered for less than five pounds, a price we do not often hear them quoted at now; of course, it was only very poor stuff; still, at five guineas we saw parcels of clean useable quality. The number of buyers appeared to be quite up to the average, and anything fine maintained its price. So far, the extra output of diamonds has not influenced the market, nor do we at the present moment think it is likely to do so.

In Amsterdam the demand is exceedingly limited, and as a necessary consequence prices are unremunerative. Very few foreign buyers are in the city, and factories are very feebly occupied. The only new event during the month is the creation of a New Diamond Trades Company, Limited, with a capital of one million of florins. The first series of 250,000 florins is already subscribed for. According to the statutes, which have obtained the Government approbation, the object of the company is the buying and working of rough diamonds, and selling the same. A loan department is also combined with it. Mr. Alexander Daniels, one of the oldest diamond merchants, is the chief director of the company. This movement is in consequence of the English cutting trade, before alluded to by us.

In Paris the trade in polished diamonds has not been very active. A few Americans visiting Paris, as a town on their travelling programme, have been almost the only buyers. There are accounts from the United States that travellers from the jewelry houses are fairly on the start now for the fall season, and that the prospects for orders are fairly encouraging. There seems to be just now a sufficiency of small stones on the market here, and middle sizes seem to be more in favor.

SILVER.

The prices of silver have varied from day to day through the whole of the month according as the demands from the Continent were made or wanting; the rises and falls, however, were only very small, the price remaining at 45 and 46 all through the month. On going to press the price stood at 46.

Copper has been steady, with a slight decline to about £54 a ton.

Zinc has been steady, with a slight decline to about £26 a ton.

Spelter has been steady, with a slight decline to about £23 15s. a ton.

Tin steady at £92 10s.

Quicksilver pretty steady at £7 15s.

No less than £222,000 worth of quicksilver were imported into this country from Seville last year, showing an unprecedented rise from £40,000.

Police News.

All our readers, we are sure, will share with the public the surprise at hearing that Pinter, the gold making swindler, although he pleaded guilty at the Old Bailey, has been let off with the insignificant punishment of three months' imprisonment.

The latest scene in the career of Bryce Wright is that he has been extradited from Paris under a charge of pawning a pair of earings, a brooch, bracelet, and necklet, valued at £400, the property of Catherine Glubb, without having the necessary authority to do so. Upon being brought up at Malborough-street Police Court, Mr. Hannay remanded him for eight days, refusing bail.

William Giovanni Imperiali, jeweler, has been charged at the Old Bailey, London, with a number of offences under the Debtors' Act. Amongst other things it was alleged that whilst in an insolvent condition he had pledged a quantity of jewelry of considerable value, obtained from some of his creditors. It was ascertained that several creditors had subscribed towards the defence, and that it was usual for a jeweler to hand jewelry over to pawnbrokers, who sold the goods and arranged with the supposed owner about the profit. The Recorder remarked that, considering this, he would discharge the prisoner.

A little sensation was caused the other day in the Garden by Julius Spitzer asserting that he had lost £3,500 worth of diamonds, which he had obtained from Lippnann Krolik, 24, Hatton-garden, on the 20th of July. The former having failed to return the stones on the day he took them to show to an Australian house, the latter proceeded to the house where he was, and asked him where were the diamonds, to which he replied, "I have lost them." Krolik stayed at the house all night, and after failing to discover anything further he gave Spitzer into custody, and charged him at the Clerkenwell Police Court with obtaining the goods by false and fraudulent pretences. The prisoner, who made no answer to the charge, was remanded.

One night recently a man called in Mr. Bennett's shop and asked to be shown a clock which was hanging near the door. Whilst Mr. Bennett was explaining the machanics of the pendulum the man's accomplice entered and abstracted a case containing sixty rings, worth £400.

Adolphus Amansey, alias William Williams, alias George Williams, and Henry Russell, alias Lionel Le Royt, alias Jas. Wesson, were charged at the Wilts Summer Assizes recently with stealing three watches and three chains from the shop of Adams Bros, at Swindon. Others were charged with receiving the goods, but the evidence against them was not sufficient, and they were consequently discharged. Amansey was sentenced to five years' penal servitude and Russell to ten.

At the West London Police Court, Robert Mendon, of Kensington, has been charged with obtaining jewelry to the value of £38 10s. from Rudolph Warner, a traveller in the employ of the Whitby Jet Company, by false pretences. The case was that the prisoner received the goods from the prosecutor, and stated that he would pay for them at the end of the month, saying that he was of good position but could not at the time settle up. Prosecutor got two names as references from him, but found they did not give statements that were commercially satisfactory about the prisoner, who would neither pay or give up the goods. The present proceedings were then instituted. Prisoner's counsel now said that his client was prepared to give up the jewelry, whereupon the magistrate discharged him.

Thomas Smith, a watchmaker, of Huntgate, Lincoln, has been sent to prison in default for twenty-one days because he had pawned a watch entrusted to him to mend.

William R. Jackson, watchmaker and jeweler, was charged on July 14th at the Liverpool Police Court with having dealt in plate without a proper licence. The Supervisor, who prosecuted, remarked that the duty was extensively evaded in Liverpool. Defendant admitted his liability and was fined the sum of £2 16s. 6d., including costs.

In 1889 three men stole two bars of silver from a railway truck on its way from the American Exchange Bank, valued at $1,928. Charles Seaton bought and melted them, and the Supreme Court has now ordered him to pay a sum equal to their value to the original owners.

Mr. Arnold, successor to Mr. Hock, of the Northcote-road, Battersea, has had his jewelry and watchmaking establishment broken into and £40 of goods stolen. Up to the present no trace of the burglar has been discovered.

Two boys were recently charged with breaking into the premises of Messrs. J. H. Shelly and Co., watchmakers, Tugwell-row, Darlington, the magistrate binding their fathers over in a sum of £10 each to send up the young shopbreakers for judgment when called upon.

Albert Alexander was sentenced the other day to two months' hard labor for stealing four ounces of scrap gold, two ounces of scrap silver, and three gold brooches, from his employers, Messrs. Hinde Brothers, 36, Hilton-street, Birmingham.

About a fortnight ago, John Fitton, a watchmaker, of Market-street, Heywood, was charged with burglariously breaking and entering the shop of Joseph Burgess, grocer, &c., his neighbour, early on the previous Sunday morning, and stealing two bottles of whisky, one bottle or port, and one bottle of claret. As the prisoner had been in business a great many years in the centre of the town, great interest was taken in the case, and the court was crowded. It appears that the grocer had for some time been missing wines and spirits, and determined to watch. Seeing Fitton enter by the back, he obtained assistance and sent for the police, who subsequently found him concealed beneath the stairs. It being ascertained that the occurrence took place after six o'clock in the morning, the case resolved itself into one of theft, and Fitton was fined ten pounds and cost.

Henry Proffitt has been committed for trial at Bolton, for sixteen cases of watch robbery committed under extraordinary circumstances. Watches to the value of £50 were given him to repair, and he is alleged to have hired several persons to pawn them for him, afterwards absconding with the proceeds to Liverpool.

Thomas Palmer and Ernest Edwards, jewelers, of no fixed address, have been remanded at Exeter, charged with obtaining, by false pretences, £30 from W. G. Rowden; Edwards being also charged with obtaining £35 from W. H. Moore likewise by false pretences. Evidence was given showing that the prisoners had advertised for money, and obtained it without intending to pay it back.

Arthur Pennicott and Owen Stapley have been charged at Chichester with stealing, on July 6th, a silver watch from the person of Ernest Johnson at Nutbourne. Johnson bought the watch from Pennicott on the instalment system, and on the stipulation that it "went." The machine, however, did not go, and hence the prosecutor would not pay the balance of 6s. Thereupon the prisoners "seized his person, and did abstract the watch." The magistrates discharged the prisoners, believing that there was no felonious intent.

John Higgins, jeweler, has been sent for trial at Birmingham, charged with stealing two coal vases, a couple of metal chains, and a set of studs from Thomas Tumely, of Ludgate-hill. The accused lodged with the prosecutor, and took advantage of it to rob the shop.

Illustrated Inventions Record.

APPLICATIONS FOR PATENTS.

8,972.—R. S. Barrie, Dundee, "Links for shirt sleeves, cuffs, cloaks, &c." 27th May, 1891.

9,411.—H. Davies, London, "Watch protectors." 3rd June, 1891.

9,587.—A. Myers and L. Myers, Birmingham, "Compasses and toy microscope combined." 6th June, 1891.

9,598.—W. L. Wise, London (communicated by A. L. Smith, United States), "Gauges for centering lenses and making other optical instruments." 6th June, 1891.

9,644.—W. W. Horn, London (communicated by J. Metz, J. W. Mitchell, and H. L. Aulls, United States), "Necktie fasteners." 6th June, 1891.

10,214.—O. Beck, London, "Drilling the jewel-holes or bearings of watches and analogous mechanism." 16th June, 1891.

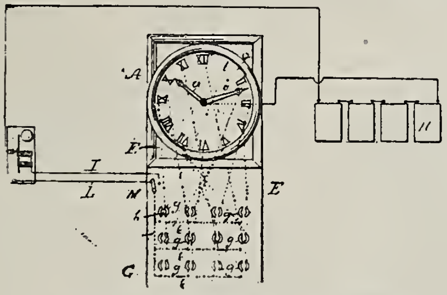
10,234.—J. H. Stewart and H. E. Smyth, London, "Brooch fasteners." 17th June, 1891.

10,254.—R. B. Smith, London, "Brooch fastenings." 17th June, 1891.

10,479.—J. Abrahams, London, "Politura, a liquid compound, for cleansing, restoring, or polishing articles in gold, &c." 19th July, 1891.

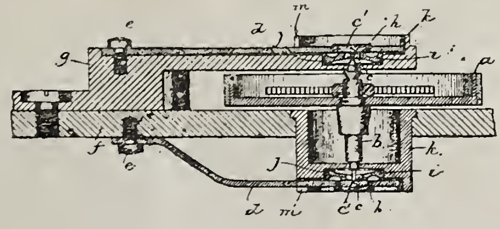
Electric Alarm-Clock.—E. M. Edgerto, Chicago, Ill.

The combination, with a clock A, an arm F, projecting from and revolving with the arbor of the hour-hand, and a battery connected to the same, of a series of insulated metal strips radially arranged around said arbor, with which said arm successively comes in contact, switch-board G, with one of each pair of contact-plates of which said strips are respectively connected, a key *h*, and an audible signal.



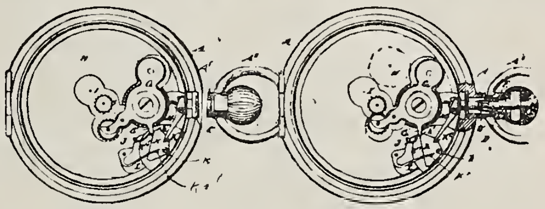
Jewel-support for Balance-Staffs of Watches.—Jules Villon, Lima, Peru.

In a watch-movement, the combination, with the compensation balance and its staff, of the socketed jewels receiving the pivots of the staff, the settings containing jewels and provided with bevelled peripheries, the supports having circular recesses which present annular seats on which said bevelled peripheries bear, and springs arranged to hold the settings on their seats with a yielding pressure, as set forth. In a watch-movement, the combination, with the compensation balance and its staff, of the cap-jewels movable endwise of the staff, the springs holding cap-jewels in their free ends, the hole jewel socketed to receive the pivots of the staff, the bevelled settings holding the hole-jewels and movable edgewise therewith, and the support having the recesses *j j'* constituting seats which support the bevelled peripheries of said settings, the springs bearing loosely at their free ends on the settings of the hole-jewels and holding the same yieldingly against their seats, as set forth.



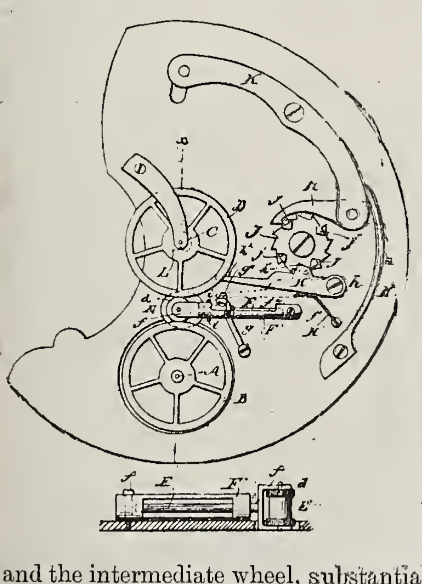
Pendant-set Watch.—Roswell L. Peabody, New York, U.S.

In a pendant winding and setting watch, the yoke G, carrying the winding and setting train and partially rotating cam K, serving as an intermediate member, the lever M for operating such cam to change the winding and setting mechanism from the hand-setting condition to the winding, as required, and having the bent arm M' engaged with the operating-collar D² on the stem, all combined and arranged to serve substantially as herein specified. The yoke G, carrying the train of winding and setting mechanism and having the bent arm G' and actuating spring J, in combination with the cam K and spring L, acting on the stud K², and with the lever M M' and the stem D, having the collar D² and arranged to be moved endwise as well as rotated, as set forth. A pull-stem D D' a spring-head C, operated by thrusting the stem and adapting the mechanism to serve in a hunting-case, and the lever M, cam K, intermediate between the lever and the yoke, said cam carrying the pins K² and K³, and the actuating spring L, in combination with each other and with the yoke G and its operating-spring J and the gearing for winding and setting, all arranged to serve substantially as herein specified.



Stop-Watch.—Charles Schlatter, Hoboken, N.J.

The combination, with the pinions arranged in different vertical and horizontal planes, of oscillating pinions arranged between the same and movable out of engagement with both of said pinions, substantially as described. The frame F', pivoted at one end, and the shaft F, journalled therein and formed or provided with a stud *g'*, in combination with the intermediate wheel E, substantially as described. The frame F', provided with the shaft F, having arm *g'* and intermediate wheel E, in combination with the lever H and means for operating the same for turning the shaft and the intermediate wheel, substantially as described. The Frame F', pivoted at one end and cut a way at *f*², and the shaft F, journalled in said frame and provided with the intermediate wheel and the arm *g'*, in combination with the spring *g*, lever H, and the ratchet-wheel J, provided with the studs *j*, substantially as described.



Gazette.

Bankruptcy Record.

Blyth, Henry John, 13, St. Nicholas-terrace, Caister-road, and late 15, North Howard-street, Great Yarmouth, watchmaker.

		£	s.	d.
Loveridge and Sons	London	17	0	0
Leigh and Co.	Birmingham	11	15	1
May, Walter	Yarmouth	15	0	0

Total Estimated Debts—£99 13s. 7d.

Cameron, Peter, 39, Winfield-road, Blackman-lane, Leeds, restaurant carver, late watchmaker. First meeting: Official Receiver's, Leeds, July 15.

		£	s.	d.
Gilyend, William	Leeds	78	0	0
Herbert, W. R.	,,	40	0	0
Longbottom, Alfred	,,	20	0	0
Wadsworth, Mary	Silsden	50	0	0

Total Estimated Amount—£240.

Hettish, Gordon, 14, Magdalen-street, Exeter, watchmaker and jeweler. Receiving Order: July 15. First meeting: Official Receiver's, Exeter, July 29. Examination: Castle, Exeter, July 30. Adjudication: July 16.

Jackson, Lazarus (formerly trading as F. L. Jackson and as J. Jackson), 12, Thornton-place, Bishopwearmouth, watchmaker. Receiving Order and Adjudication: July 15.

Jefferson, John Edwin and William Jefferson (trading as Jefferson Brothers), 68, Low-street, Keighley, watchmakers and jewelers. Adjudication: June 24.

Leadbeater, John, 14, Derby-street, Hulme, Manchester, watchmaker.

		£	s.	d.
Jacobs, —	London	10	0	0
Schaffer, —	,,	10	13	0
Bosson, Thurston	Garston	27	0	0
Ostler, John Edward	Hulme	22	0	0
Kennedy, Dr.	Manchester	10	0	0
Payne, George	,,	10	0	0
Vigier, N.	Soleure	28	0	0

Preferential Creditor.

Ostler, John	Hulme	11	0	0

Rosenberg, Esther, 162, St. Paul's-road, Canonbury, N., London, jeweler.

		£	s.	d.
Graham and Co.	London	40	0	0
Whiteley, William	,,	43	1	3
Barker Bros.	Birmingham	29	13	1
Cox Bros.	,,	391	0	0
Jackson Bros.	,,	55	2	4
Mole and Jones	,,	77	7	0
Neale, W.	,,	37	15	10
Nock and Saunders	,,	27	17	6
Payton, W. H.	,,	73	11	0
Swain and Adams	,,	68	10	0
Wakefield Bros.	,,	50	1	0
Whitehouse, E.	,,	71	15	2
Denyler, L. M.	Neuville	34	4	8
Fully-Secured Creditors		218	8	4

Partly-Secured Creditors.

Loach Bros. (Estimated value of security, £31 14s.)	Birmingham	108	14	6
Rosenberg, Joseph (Estimated value of security, £32 5s.)	Cork	71	18	0
LIABILITIES ON BILLS, &c.		284	12	7

(Not expected to rank.)

Deeds of Arrangement.

Abrahall, M. J., and Co. (Michael John Abrahall, trading as), 11, Pitsford-street, Birmingham, and residing at Birchfield-road, Handsworth, manufacturing jeweler. Trustee: Allen Edwards, Birmingham, C.A., with a committee of inspection. Secured creditors, £2,037. Filed July 7th; unsecured liabilities, £6,292 16s. 1d.; estimated assets, £3,730 8s. 7d.

		£	s.	d.
Backes and Strauss	London	678	3	8
Isaacs, A. M. J.	,,	715	15	6
Steitz, F.	,,	130	0	0
Whitehorn, E.	,,	114	5	0
Appleby, and Co.	Birmingham	55	14	6
Atkins, F. W.	,,	36	18	6
Booth and Son	,,	29	14	0
Court, G.	,,	100	0	0
Cox Bros.	,,	51	4	9
Goldsmid, M. J.	,,	81	4	6
Haseler and Milner	,,	136	15	9
Hinde Bros.	,,	78	11	8
James Bros.	,,	45	2	6
Johnstone, G. H., and Co.	,,	26	4	8
Levi and Salaman	,,	59	9	1
Myers, W. and G.	,,	46	0	0
Mills, E. J.	,,	20	4	6
Potosi Silver Co.	,,	33	17	7
Padmore, John	,,	1,256	0	0
Peyton and Son	,,	192	11	9
Pettefer, A. R., and Co.	,,	30	7	0
Robinson,—	,,	29	3	5
Spiers, and Co.	,,	35	12	0
Smith and Ewen	,,	150	9	7
Spencer, W.	,,	54	8	0
Thorneywork,—	,,	63	16	4
Tandy and Rudge	,,	58	10	6
Villiers and Jackson	,,	29	17	6
Moore, Joseph	,,	67	0	0
Abrahall, A. J.		100	0	0
Fentham's Trust		100	0	0

C. **Hollis** and Son (Henry Hollis), 3, Mary Ann-street, Birmingham, electro-plater.

		£	s.	d.
Bourne, Henry	Birmingham	26	2	3
Butcher, Ann Maria	Blackpool	436	1	6
Ratcliffe, J.F	Birmingham	14	13	4
Tyszack, Mank, and Co.	Sheffield	13	9	1
Vale, Frederick	,,	19	10	8
Bankers' Claims	,,	12	16	10

De Losada, Jose R. (Francisco del Riego, trading as), 105 Regent-street, W., watch manufacturer. Trustee: John Manger (Mojon, Manger, and Co.), 26 and 27, Bartlett's-buildings, Holborn-circus, E.C., watch and musical box manufacturer, with a committee of inspection. Filed July 23rd; unsecured liabilities, £2,419; estimated assets, £4,000.

Del Riego, Francisco, Regent-street (see J. R. de Losada).

		£	s.	d.
Mojon, Manger, and Co.	London	365	10	6
Tripplin, Juliens	,,	93	17	6
Rawley, A. and H.	,,	48	1	0
Tatham, Oblen, and Nash	,,	300	0	0
Dinner Bros.	,,	59	8	0
Monteigo	,,	100	0	0
Hall, H. E.	,,	160	0	0
Gillett and Co.	Croydon	250	0	0
Bonhote Freres	Peseux	695	17	0

Horsfall, Francis Joseph, 26A, Guildford-street, Leeds, and lodging at 5, Eltham-grove, Woodhouse, Leeds, watchmaker and jeweler. Trustee: Myles Lee, Calverley-chambers, Victoria-square, Leeds, C.A. Filed July 20; liabilities, £77 2s. 11d.; assets, £62.

		£	s.	d.
Abraham, Julius	Bradford	17	16	3
Cohen, Laurence, and Co.	London	15	17	6

Norman, Henry, 27, Buckingham Palace-road, Pimlico, S-W., jewelers. Partners: Henry Norman, 92, Parchmore-road, Thornton-heath, S.W., and George Swainston Norman, 104, Denbigh-street, Pimlico, S.W. Trustees: Warren Faraday, 66, Hatton-garden, E.C., wholesale jeweler, and another. Secured creditors, £723 18s. 8d. Filed July 13th; unsecured liabilities, £2,558 19s. 0d.; estimated assets, £1,277 12s. 11d.

		£	s.	d.
Ayres, T. R.	London	304	17	6
Bromwich, Edwin	,,	126	8	10

Buller, Hutchinson	London	65	18	0
Chaplin and Sons	,,	107	4	4
Dyke, William	,,	47	15	10
Farraday and Davey	,,	303	7	7
Fenton Bros.	,,	104	4	4
Fowler, James	,,	55	0	0
Gay, Lamaille, and Co....	,,	210	0	5
Jacobs, Aaron	,,	71	0	0
Johnson, G. W.	,,	159	9	0
Mackrell, E. T.	,,	45	10	0
Mossop and Rolfe	,,	723	18	8
Norman, J.	,,	656	6	4
Perrier, M. A.	,,	85	16	0
Sneath, E. H.	,,	52	10	0

Wright, Robert, 111, Mill-street, Macclesfield, watchmaker and jeweler. Trustee: George Ibeson, 76, Derby-street, Macclesfield, C.A. Filed July 18; liabilities, £73 5s. 5d.; assets, £35.

		£	s.	d.
Anighi and Branchi	Macclesfield	15	14	11
Hirst, A. and S.	Oldham	13	5	10
Myers, J.	Manchester	17	0	0

Private Meeting.

Hodgson, C. Dewsbury, jeweler.

		£	s.	d.
Alabaster and Wilson	Birmingham	47	16	7
Bendon, George, and Co.	London	61	5	4
Briggs and Co.	Sheffield	36	17	0
Evans and Brown	Birmingham	53	14	0
Fitter, H., and Son	,,	31	5	0
Foster, J. and T.	Manchester	32	19	1
Graham, J. H., and Co.	Birmingham	42	12	0
Griffiths, H., and Son	,,	117	6	0
Jerome and Co.	Liverpool	48	16	0
Manton and Mole	Birmingham	38	0	9
Marks, A. and J.	Manchester	37	0	0
Nixon, C. E....	,,	33	19	0
Parker, J., and Son...	,,	26	13	5
Rotherham and Son	Coventry	51	9	6
Schaffer, Sons, and Co.	,,	25	0	0
Skinner, John	Birmingham	28	13	0
Stauffer, Sons, and Co.	,,	37	19	0
Walker and Hall	Manchester	63	0	11
Williamson, H.	Birmingham	127	16	7
Woodward and Co.	,,	42	10	3
**Bankers' Claims*	,,	270	0	0

LIABILITIES.

Less estimated value of securities ...	170	0	0			
Partly secured creditors	£270	0	0			
Unsecured creditors				1,333	12	6
				100	0	0
				1,433	12	6

ASSETS.

Book debts (estimated to produce)...	30	0	0
Fixtures and fittings, about...	100	0	0
Stock at cost price	1,077	2	0
	1,207	2	0
Less amount to be paid in full for rent, rates, taxes, and wages	70	5	0
	1,136	17	0
Deficiency	296	15	6
	1,433	12	6

At a meeting of the creditors herein, held on the 14th inst., the creditors present resolved to accept a composition of 10s. in the £, payable at 3, 6, 9, 12, 15, and 18 months, the last three payments secured.

Bills of Sale.

Allan, Ernest, 41, Edith-road, Cape-hill, Smethwick, and 24, Warstone-lane, Birmingham, watchmaker and repairer. In favour of James F. Townend. Filed June 24. £30.

Beddow, William Henry, 10, 55, 57, & 59 High-street, Wem, Salop. Of stock-in-trade, &c., at 10, 57, & 59 High-street, aforesaid, jeweler. In favour of John Nield. Filed July 20. £80.

Brims, John, 8, Leverton-street, Kentish-town-road, silversmith. In favour of David N. Brims. Filed June 24. £30.

Harris, James Walter, 54, Barnsbury-street, Islington, N., jewel-case maker. In favour of the Lon. & West. Loan Co. Filed June 26. £30.

Lacey, Thomas, 23, Carlyle-road, Lozells, Aston, near Birmingham, jeweler. In favour of Alfred Selman. Filed July 11. Settlement in trust for wife, &c.

Lindow, Joseph, 72, Highbury New-park, Canonbury, N., and 105, Hatton-garden, E.C., diamond dealer. In favour of Frederick Lewis. Filed July 8. £100 of household furniture.

Lindow, Joseph, 72, Highbury New-park, Canonbury, N., and 105, Hatton-garden, E.C., diamond dealer. In favour of Frederick Lewis. Filed July 15. £200, absolute sale of household furniture.

Maze, Ernest, 5, Noel-street, Islington, N., jeweler. In favour of Charles G. Lodge. Filed July 15. £32.

Norcross, Frank, 58, Ashton New-road, Manchester, watchmaker and jeweler. In favour of Abraham Haigh. Filed June 25. £97.

Norcross, Frank, 58, Ashton New-road, Manchester, watchmaker and jeweler. In favour of Abraham Haigh. Filed July 16. Absolute assignment.

Nyburg, Nathan Simon, 44, Marquess-road, Canonbury, London, N., dealer in jewelry, silver, and precious stones. In favour of Jacques N. Nyburg and another. Filed July 20. £170.

Dividends.

Cohen, Robert, late 2, Crimbles-street, at present in lodgings, jeweler's assistant. Discharge granted unconditionally.

Robinson, Claude, 49, Westborough, Scarborough, jeweler and fancy dealer. First and final dividend of 4s. 8d. at Official Receiver's, Scarborough.

Partnerships Dissolved.

Harris, L. & Co., Fuencarral 24, Pral Dra, Madrid, and 35, Hatton-garden, London, E.C., diamond merchants. June 1. Debts by Lionel Harris, who continues under the same style.

Planet Watch Co., 89, Clarence-road, Clapton, watch manufacturers. May 1. Debts by William Sammes.

Saunders Bros. & Greaves, 3, Augusta-street, Birmingham, manufacturing jewelers. June 25. Debts by Walter James Saunders and John Saunders.

Smith, J. J. & Co., 93, High-street, Putney, S.W., jewelers and dealers in fancy goods. June 3. As regards Joseph James Smith.

Mr. Harris, jeweler, of Leith Walk, recently sought to recover £50 from the North British Railway Company, for unlawful ejectment from a train at Haymarket Station. The case for the plaintiff was that he collected the tickets from the passengers in the same compartment and gave them to the collector, who afterwards found that one shilling was due on one, and asked the plaintiff for payment; this was refused, and the company's servants thereupon ejected him from the carriage. It was argued that by collecting other passengers' tickets the plaintiff was not made answerable for their deficiencies. After proof, judgment was given for the plaintiff, with £25 damages and costs. The railway company have just appealed, and the appeal has been dismissed with costs, Lord Justice Clerk observing that the position of the defendants was a startling one.

A disastrous fire occured at the well-known bell foundry of Messrs. Taylor and Sons, Loughboro, Leicester, on the 23rd of June, by which nearly the entire place was destroyed. The fire originated in a lower room where some oil was stored, and, owing to a bad supply of water, could not be got under. The damage is estimated at about £4,000, and is only partly covered by insurance.

LETTERS TO THE EDITOR.

THE REVIVAL OF HERALDRY.

To the Editor of The Watchmaker, Jeweller and Silversmith.

Sir,—There has appeared a tendency of late on the part of purchasers of gold and silver work to recognise Heraldry as an art which has been too much neglected, and which ought to receive more patronage with a view to its adoption as one of the most suitable and appropriate subjects for the decoration of articles made in gold and silver.

For many centuries Heraldry has been regarded as a branch of knowledge which could on no account be neglected by any who had pretensions to nobility of ancestry. It has been the means of preserving the memory of great deeds and high honours, and of showing the several connections which one family bears to another. For these reasons Heraldry is of great service in enabling people to trace at a glance something of the history and pedigree of noble and ancient families. To gain an idea of the importance attached to Heraldry in the past one has only to visit Westminster Abbey, or any of the ancient cathedrals, to see how profusely it is applied in perpetuating the memories of greatness and nobility. Every baronial hall, too, is teeming with examples of Heraldry, where may be found almost every branch of art-work; stained-glass windows, stone and wood carvings, paintings on canvas and parchment, and nearly always engravings on the old family plate.

Unfortunately for the Heraldic engraver's art, it became the fashion a few years since to have silver plate ornamentally engraved over nearly the entire surface, which left but little room for the insertion of Heraldic devices; but, thanks to the change of fashion in silver ware, the articles are now manufactured without so much meaningless ornamentation—generally, in fact, left quite plain—and there is consequently more scope now for the Heraldic engraver. Six or seven years ago the Goldsmiths' Company offered prizes for the best engraving of the Prince of Wales's Arms and Ensignia, to fill the space of a seven-inch circle. The wardens of the company felt that that was the kind of work which ought to be encouraged, and the public taste of the present day is certainly inclining to the same opinion, judging by the bolder styles of Heraldic work which are now being ordered in the silversmiths' trade.—I am, Sir, yours obediently. James W. Jenkins.

56, Lady Somerset Road,
Highgate Road, N.W.

R. J. R., Barnard Castle.—We have succeeded after some trouble in recovering the gong, and have posted it to your address. We cannot obtain a satisfactory reason for its detention; but, as you have been before informed, the advertisement has now been withdrawn.

E. Meylan, Port Perie, South Australia.—In answer to your first question, we should hardly like to say what book we think would best suit you; as none covers the whole of the field mentioned. We should recommend you to commence the study of optics on a scientific basis, and as such should advise you, say, "Garnot's Physics"; that would give you a good idea of the science that underlies it all, together with the various lines along which the different branches of optical science have been developed, With reference to the second question, we should unhesitatingly say "Saunier's Treatise of Modern Horology" (£2 2s.), which is the most complete of any work at our tongue, and there are few wants likely to occur, unless very special, that cannot be met by it. Of course, there are several other good handbooks, but only about a third or a quarter as complete (and expensive) as this.

J. Wilkins.—Such an arrangement as you describe is already in existence and patented, and known as Newsome's patent safety wheel for going barrels; and, although in minute details his differs a little from yours, we consider his the more simple, and as quite forestalling yours.

W. Leverson.—The red gold mounts employed by the firm you mention are not their own manufacture; they are French make. The firm has a house in Paris, who has an opportunity of getting very fine things in this line. Further, there is now quite a number of French firms who are sending travellers over here with these mounts. Mounts for Christmas things are now in the market, but it is impossible to say what is going to take. At present we do not consider anything very special has appeared.

J. S. T.—So far as we have been able to judge, there are quite as many American tourists this year as usual, but from inquiries in numerous directions they do not seem to be laying out such large sums (at any rate in jewelry) as they do sometimes.

"Retailer."—Although we answer correspondents and allow their letters to appear under whatever form they like to sign, we do not do so unless their communication or question is accompanied by their correct name and address; consequently we are unable to publish your letter in reply to "Bankruptcy v. Private Arrangements," unless you furnish the information required.

D. Tunks, Accrington.—From your description of your going barrel we should think it is something more than the patent recorded in the last issue of this journal, but are surprised that you should keep it lying by for so many years, and thus give later inventors the chance of superceding you. We should be pleased, however, to see your barrel, and might then be able to give you advice.

Applications of the Chronograph.

Everyone is familiar with the gradually diminishing circle surrounding the outer edge of some chronographs which marks the rate at which a train is travelling when passing from one quarter mile post to another; or a trotting horse, when passing by milestones, by dividing the number shown by four. One of the next steps in this direction is that of finding the distance in a rifle range by taking the sound to travel 380 yards in a second, then dividing off the dial into divisions representing hundreds of yards. For example—taking the transit of the flash to be instantaneous, which it practically is, on its appearance by pressing the stud, the chronograph hand is set in motion. Upon receiving the report, say a little over a second and a quarter later, the stud is pressed down again, and the chronograph stopped, marking 500 yards as the range. Of course, it must be borne in mind these can only be approximate, as the rate at which the ball travels, and also the influence of the wind, are important factors. Varieties of the same method enable one to calculate the distance off of a man whom one either sees and hears fire, or sees fire and hears the ball hit, can easily be made. A far more exact example of the same application can be employed in measuring the distance of a thunderstorm, as in that instance the lightning and thunder are produced simultaneously, and the space of time elapsing between the receipt of the two represents the distance the storm is off, which, in many instances, is of the greatest importance, as when less than a certain distance off the earth, the strike occurs from cloud to earth, or from earth to cloud, causing the usual well known disasters.

Of the six English tourists drowned near Victoria, Vancouver, three are from Northwich, namely, Mr. J. H. Edwards, and his two sons, Horace and Frederick. Mr. Edwards had been in business as a jeweler at Northwich for a number of years, and left five weeks ago with two of his four boys for Vancouver, intending to settle there.

BUYERS' GUIDE.

ARTISTIC SILVER SUNDRIES.

Pringle Robert & Co. actual Makers (not merely Factors) at their Steam Works, 40 and 42, Clerkenwell Road. Children's Cans, Salt Cells and Spoons, Serviette Rings, Apostle and Coffee Spoons, Cups, Goblets, Mustard Pots and Spoons: Muffineers, Cream Jugs, Sugar Basins, Tea Spoons, Medals, and Alberts, duty free. Old Gold and Silver bought in any quantity for melting at the highest market price. Silver Goods sent out on approbation.

Pringle Robert & Co. actual Makers (not merely Factors) at their Steam Works, 40 and 42, Clerkenwell Road. Children's Cans, Salt Cells and Spoons, Serviette Rings, Apostle and Coffee Spoons, Cups, Goblets, Mustard Pots and Spoons: Muffineers, Cream Jugs, Sugar Basins, Tea Spoons, Medals, and Alberts, duty free. Old Gold and Silvor bought in any quantity for melting at the highost market price. Silver Goods sent out on approbation.—*See Advt.*

BAROMETER AND COMPASS MANUFACTURERS.

Barker Francis & Son 12, Clerkenwell Road, London, Wholesale Manufacturers of Pocket and Charm Compasses, Aneriod Barometers. Sun Dials, etc. Illustrated Trade Catalogue free on application.

BOX MAKER.

Kettle, F. G. 9, New Oxford Street, and 11, Kingsgate Street, London, W.C. Send for Price List, post free.

CHRONOMETER MANUFACTURERS.

Oram George & Son 19, Wilmington Square, Clerkenwell. Marine and Pocket Chronometers, all kinds of first-class Keyless Lever Watches, Chronographs, Repeaters, and Regulators always in stock.

Isaac H. P. Chronometer and Watch Maker to the Admiralty, 10, Spencer Street, Clerkenwell, London, E.C. Marine and Pocket Chronometers, Adjusted Levers, plain and Keyless. All kinds of fine watches

CLOCK MANUFACTURERS.

Smith John & Son, Midland Steam Clock Works, Derby.

Wilkins John & Co. 11, St. John Street Road, Clerkenwell.

DIAMOND POLISHERS.

Ford & Wright Steam Lapidary Works, Diamond Cutters and Polishers, Gem Cutters and Lapidaries in all branches, 18 and 19, Clerkenwell Green and Clerkenwell Road.

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The Qualification of the Optician.

WE have received numerous letters during the last month, and on previous occasions, upon a point that we have often raised as to the qualifications of the optician. We have always maintained that no man ought to be allowed to prescribe for a defective eye, any more than for a defective heart, without being duly qualified to do so. We are quite sure that by far the greater portion of the better classes think so, too; and hence it is, that for the least thing they run to an opthalmic surgeon, which, in most cases, any properly qualified optician would understand equally well, as in nine out of every ten of such cases there is no disease present, and therefore no necessity for an opthalmic surgeon's attention. But at present there is an absolute want of confidence on the part of the public in opticians, the latter having no credentials, however clever they may be. This is obviously unfair to the optician, as whatever his knowledge of his profession—for profession it is—may be, there is practically nothing to distinguish him from the man who puts up a card, "all sights sixpence a pair."

Then again we have heard from occulist-surgeons sad accounts of the inability of some so-called opticians, it being considered not safe to send a prescription to an optician whose skill is not known. Of course, we are fully aware that such a state of things is calculated to create a great deal of jealousy in the trade, and several of our correspondents take a very injured view of the case, especially with regard to public institutions; but while we sympathise with many of the views they express, we must say we consider the surgeon's present course the wisest he can adopt. If, however, the selective action of the surgeon was rendered unnecessary by opticians holding qualifications as valid as his own, there would be no justification for such action on the part of the surgeon, and doubtless he would discontinue it. But at present there is nothing to show the surgeon that this or that optician understands his business.

What we maintain ought to exist is a recognised centre from which diplomas or their equivalents ought to be issued to qualified opticians. No matter whether these came from a Royal Opthalmic College or from the Honorable Spectacle-makers' Company, which ever was made the recognized test the public would soon acknowledge, and the dignity of the profession would be elevated in proportion to the severity of the examinations and the difficulty of obtaining the licentiateships. Personally we consider the right body to undertake the work would be the Spectacle-makers' Company, who ought to provide not only a committee of examiners but a thorough efficient staff of lecturers and teachers, to supply the knowledge of the science to members of its craft.

If the Company could see their way clear to do this they would themselves be elevated in the eyes of the public, by whom they are scarcely ever heard of, and they would share something of the dignity of the Royal College of Surgeons. We are fully aware that such an undertaking would mean enormous expense; but we are sure that if the Company took the initiative grants could soon be procured, and it would not be long before the value of the work would be recognised by philanthropists, and we should soon get chairs endowed. It would not be the fostering of an art, which, however commendable in itself, had no ulterior object save the pleasing of the ears or the feasting of the eyes; it would strike at the most prevalent and universal afflictions of human nature, and would mean the lifting of the veil which dims every object around the afflicted, and the setting him in the light of day. The value of a City Company is not to be estimated by the strength of its roll or the number of banquets it gives in a year, but by the steps it takes to assist, to foster, and develop the craft whose name it bears.

Messrs. Stauffer, Son and Co. have just passed at the Kew Observatory a Gold Tourbillon Chronometer, which attained the extraordinary number of 91·6 marks, thus beating all records. For positional adjustment it gained 39·3 marks out of a possible 40. This is the same Chronometer which obtained the first prize and honors for its marvellous results at the Neuchâtel Observatory. The watch referred to was made throughout at their own factory: Chaux-de-fonds, Switzerland.

Technical Education in Birmingham.

THE Midland metropolis is essentially a manufacturing centre, and its city council has proved fully alive to its requirements in the matter of technical education, suited to the varied processes carried on within its borders. It may be remembered that some twelve months or so ago, the governing powers of the great local polytechnic—The Birmingham and Midland Institute—found themselves unable to successfully cope with the constantly increasing cost of their work of education, and a scheme was elaborated whereby the "industrial" portion of the institute was taken over by the city authorities, to be worked by them in accordance with the recently passed "Technical Instructions Act." And right well have they set about their task, and if their success is commensurate with the energy and ability displayed in organising the scheme of education, then the Birmingham Municipal Technical School, as it is now called, will speedily prove of incalculable benefit not only to the trade of the town but to the whole art of the jeweler.

In a community such as Birmingham, comprising such a vast number of utterly diverse manufactures, it is simply impossible that any one trade, or series of kindred trades, should receive undue advantages from the common funds; and we were thus prepared for but a meagre programme of instruction for our own trade. But we must confess to a most satisfactory disappointment in this direction. In perusing the syllabus issued, we are forced to admit that we have been well dealt with; and if our fellow trades are not jealous of the amount of attention we of the precious metals have received, we certainly have no cause to complain.

The session commences on Monday, the 14th instant; and the following extract from the introduction to the syllabus will sufficiently indicate that genuine technical education is intended, and not merely theoretical teaching: "Every lesson will, as far as possible, consist of a half-hour lecture, given by the teacher in the laboratory, and two hours at least practical work performed by the student under the direction of the teacher, or a demonstrator."

Of course what may be termed the basis studies, applicable more or less to each and every special line, are fully represented. There are Chemistry, Electricity, Physics, Mathematics, etc., and efficient teachers have been secured in each of these departments. In addition to these general subjects, there are two sections, exhaustively catered for, which apply to our own trades—1st, A "special course for Gold and Silver Trades," and 2nd, a "special course for Electro-plating and Gilding Trades." The first course is "Practical Metallurgy for Gold and Silver," and comprises:—

Physical Properties.—Specific gravity, fracture, lustre, color, impurities, &c.
Metallurgical Properties.—Ores, smelting, cupellation, &c.
Furnaces.—Smelting and annealing, &c.
Fuel.—Varieties, character, &c.
Silver, Gold, Platinum.—Physical and chemical properties, ores, compounds, extraction, preparation of pure gold and silver, shop dirt, lemel, refining, &c.
Alloys.—Standard Silver and Gold, solders, impurities, coloring, &c.
Assaying of gold and silver.

The second course is "Practical Electro-metallurgy for Electro-platers," and comprises:—

Batteries.—Amalgamation, charging, arrangement of cells, resistance board, cyanide, solutions, recovery of gold from spoilt solutions, &c.
Preparation of solutions and remedy for defects.
Deposition of silver and gold, and bright silver.
Estimating weight of gold and silver deposited.
Oxydising.—Stripping old work.
Purifying.—Parcel gilding, &c.

It will be seen from these digests that the curriculum is a thorough one, and we trust that many of our younger operatives will take advantage of it. The knowledge thus to be gained will be of inestimable use to them in their business career, and, whether they be masters or men, it will raise them above the average level of their more neglectful compeers.

That there may be no possible disability existing on the score of expense, the fee for each complete course is fixed at ten shillings per year.

We notice further that a number of Free Scholarships, tenable for two years, are offered for competition by the committee, upon the result of an examination of an elementary character. Well may the elders amongst us look with envy upon the exceptional facilities offered to the learners of to-day. In the series we have sketched there is an almost endless source of progress to the earnest and determined student workman. There are possibilities to-day of which his prototype of a generation ago had not the faintest conception.

It would perhaps be well to add in conclusion that all this is in addition to the Special "Jewelers" School in Vittoria Street, of which a report appeared in our last issue.

The Coventry Watch Movement Company.

A MEETING of shareholders and others was held a few days since at the works of this company to consider, and if thought fit, to authorise the directors to allot preference shares which had been promised. The amount required was about £5,000, but promises had been received for only £2,000. After some discussion as to the financial position of the company, it was decided to defer allotment for a fortnight upon condition that in the meantime promises amounting to £4,000 were received.

Since the above meeting the directors have taken stock, with the result, that instead of a loss there is a balance to the good of £123. As Mr. Singer remarked, a great deal of energy had been thrown into the concern, and the place being now in thoroughly good working order, there is no reason why the company should not have a prosperous future. It would be a misfortune for the town if a business, which promises so well, were allowed to go down for want of capital. It is satisfactory to observe that there is a disposition on the part of public-spirited citizens to rally to the support of the company, and there should be now no difficulty in getting the requisite capital, especially seeing that both interest and capital have alike preferential rights.

We cannot help contrasting things on this side with what they do in America. If a watch company or any other industry that is likely to be beneficial is started, the citizens will always subscribe liberally, not in thousands but in tens of thousands; and so they ought, seeing how greatly the place is benefited by it. We fear the watchmaking industry in this country will die out unless some enterprising capitalists come to the rescue. For, as it is, men say there is no inducement for them to become skilled workmen, as there appears such little scope for their abilities. So that unfortunately when they get educated above the average, they leave the trade for something better or to go abroad, as our list of honors men often testifies.

The Birmingham Jewelers' and Silversmiths' Association.

The HALF-YEARLY meeting of the above association was held at the Assay Office, Birmingham, under the presidency of the Chairman of the Association, Mr. Walter Best. Amongst those present were Messrs. Charles Green, William Tonks (Hon. Sec.), J. M. Banks, J. H. Mole, J. Allday, junr., Jno. and L. Spiers, P. H. Levi, Nathan Buncher, and Allen Edwards (Secretary).

Mr. L. Spiers said he would like to suggest that any future reports be printed and circulated among the members prior to the meeting.

The Chairman promised that Mr. Spiers' suggestion should be brought before the notice of the committee, after which he proceeded to read the half-yearly report of the association, from which it transpired that forty-one meetings of committee and sub-committee had been held during the past half-year. In response to the invitations for contributions to the Special Fund the following had been received:—£140 13s. for the Art and Technical Schools Fund, £42 15s. for the Vigilance Department, and £32 12s. for the Debtors' Prosecution Fund; and the committee hoped all the members would see their way to contribute. The present strength of this association was stated to be 183, and in all departments they were making considerable progress. In the matter of insolvencies they had been exceptionally successful, and it was now found that the solicitors of insolvent debtors were acting harmoniously with the association. In one case, where 5s. in the £ was offered, the association had succeeded in getting 6s. 8d., and in no case where the association had advised had their advice been overthrown. They had appointed Mr. Sidney Porter consulting solicitor to the association. The number of students attending the Art and Technical Schools was 157, and there had been a fair average attendance. They had been kept open longer than the usual term for the purpose of enabling several students to complete work which they had in hand for exhibition at the Armourers' and Braziers' Exhibition, where six students had entered, and two were successful. At the suggestion of Sir Philip Magnus, the committee had prepared a syllabus of subjects for examination, and had forwarded the same to the City and Guilds of London Institute, who had accepted it and appointed Mr. Charles Green examiner. Acting upon the suggestion of the committee Mr. Charles Green had sent an account of the £500 kindly granted by the Guardians of the Assay Office, showing how it has been expended, and in a letter to the Guardians had pointed out that the fund was nearly exhausted, and asking for further assistance at the hands of the Guardians. Mr. Buckley, the chairman, had written asking for particulars as to the amounts subscribed by the trade, and after some further correspondence, in the course of which Mr. Green stated that the original estimate of the cost of maintaining the schools of £210 had been found too low, the Guardians decided to vote another £100 to the association. The Chairman moved the adoption of the report of the Vigilance Committee as read, which was seconded by Mr. Green, and carried.

The Chairman next proposed that the hours of attendance at the schools during the forthcoming session be from 6.30 to 8.30.

Mr. Green was glad to have an opportunity of seconding this motion, as he was, in a measure, responsible for it. They were only just getting out of the experimental stage, and the question as to how many hours the boys should devote to study had occupied much attention. Last session they felt it their duty to reduce the time, but it was soon found that they had been over-kind, and had taken away some of the usefulness of the school. The time at the students' disposal was comparatively so short that they were unable to grapple with the work in hand, and both the boys and masters lost interest in the work. The students had asked to be allowed to work an hour extra, and they had to keep the school open three or four weeks longer to allow them to finish the work they had in hand for exhibition, and he felt that by keeping the schools open until 8.30 they could not be censured for severity. At any rate, his suggestion was to try the effect of an alteration. The motion was then put to the vote and carried.

Mr. P. H. Levi moved that the best thanks of the association be given to the Guardians of the Assay Office for their donation of £100. This was seconded by Mr. Nathan.

Mr. Green, who, though desirous of supporting this motion, felt that perhaps as a Guardian himself he was somewhat out of order, but as he had been instrumental in obtaining this further donation from the Assay Office he felt he might speak on the subject. Mr. Buckley was, he said, surprised to hear that the trade had only contributed £100, and it was this fact which caused the Assay Office to limit their contribution to one year with the object of seeing what support the trade gave it. He (Mr. Green) urged upon the members to lend their best support to the scheme, and asked those who were not called upon to give their time to assist them with their guineas. The school was only a trial, but it must grow, and they must look at it as beneficial to the trade. The boy who passed through their school with honors carried his character in his pocket, and he pronounced it a grand thing for a boy to go forth into the world with these credentials. This was a plan which would seed and grow again, and he trusted the members would not give way to "a-rest-and-be-thankful sort of feeling."

Mr. L. Spiers thought the merchants and factors, many of whom were interested in technical education, would contribute to the association's funds if asked.

Mr. Green said they had all along objected to "taking round the hat."

The motion of Mr. Levi was then put and carried.

Mr. Lord moved a vote of thanks to the Guardians for the use of the meeting-room.

Mr. Spiers seconded the vote, which was carried.

A further vote of thanks to the Chairman was proposed by Mr. Spiers and seconded by Mr. Mole, which concluded the proceedings.

Chapel Fields Philanthropic Institution.

ON July 28th the annual meeting of the above institution was held at the Craven Arms Inn, Craven Street. There was a good attendance, including the President (Mr. E. Ball), Vice-President (Mr. H. Caldicott), Alderman Read, Messrs. J. T. Lower (secretary), W. R. Smith, F. Loverock, B. Haymes, E. Martin. G. Turner, C. Band, W. Smith, J. West, A. Welch, C. Lowe, J. Thompson, W. Owen, J. Fairhurst, J. Morley, C. Catlin, A. Randle, J. Martin, G. Bridger, T. Gardner, W. Steary, J. Thrasher, &c. The annual report showed that eighty-three cases had been visited by the committee, and other active members, in various parts of the city, some of them being most distressing ones, which after investigation had been relieved with various sums of money, according to circumstances, amounting in all to £56 18s. 0d. A very large number of Coventry and Warwickshire Hospital and Dispensary tickets, Birmingham Eye Infirmary, and Ear and Throat Hospital, and other tickets have been given to deserving persons too poor to pay for efficient medical or surgical aid. The committee thanked Messrs. Rotherham and Sons who, for the sixth year in succession, had given to the Society a donation of £10; The Mayor, and the subscribers to the Coventry Cotton Mill Operatives' Relief Fund for a donation of £25 granted from their funds; Mr. J. Gulson, Mr. F. Twist, the late Mr. I J. T. Newsome, Mr. C. P. Newman, Mr. C. H. Slingsby, and all others who had so generously contributed to the funds. Deep regret was expressed at the loss of an old and tried friend in the late Mr. I. J. T. Newsome, one of their earliest and best friends, who did all he possibly could to help them. The flower show and sports benefited the funds to the extent of £35. The usual weekly meetings had been well attended. The balance-sheet showed receipts £173 4s. 8½d., and expenditure £98 6s. 0½d., leaving a balance of £74 18s. 8d. The report and balance-sheet were adopted. Several propositions were under notice relating to the name of the institution, and it was ultimately decided that the name of the institution be "Chapel-fields Philanthropic Institution," instead of "Chapel-fields District and Watchmakers' Philanthropic Institution." The officers for the ensuing year were elected as follows:—Mr. H. Caldicott, president, Mr. Martin, vice-president, and the committee of last year was re-elected. Votes of thanks were accorded to the officers for their services, and the proceedings closed.

The eighteenth annual fête and sports in connection with this institution were held on Monday, August 3rd last in the Cricket Grounds, Coventry. Notwithstanding the bad weather there were upwards of 5,000 people present. The following were the officials:—Judges: Mr. Alexander Rotherham, J.P., and Mr. John Bill, J.P. Handicapper: Mr. W. W. Alexander (Birchfield H. and M.C.A.A.A.) Lap scorer: Mr. W. M. Turrell. Referee: Mr. C. F. Hill (Burton A.C. and M.C.A.A.A.) Clerks of the course: Messrs. C. Wareham and W. Lines. Starter: W. Wareham. Timekeepers: Messrs. J. H. Godsell and W. Hosier. Sports' Committee: Mr. Walter Mason (president), Mr. T. L. Price (vice-president), Messrs. C. Wareham, W. Lines, H. H. Goodwin, G. H. Waterfall, W. Parsons, J. Price, G. Skidmore, W. Freeman, J. S. Edmonds, H. Mander, E. Kirk, J. Belfield, and J. Harrison. Hon. Sec. to Sports' Committee: Mr. Walter Mason (president).

Presentations.

WE were recently rather taken by a specimen of fine silversmiths' work, turned out by Mr. B. Burnet, of Carr Lane, Hull, and 319, High Holborn, which demonstrated how fine an ornament can be made out of an illuminated address. It is in the form of a fine open door with centre arch, attached by elaborate hinges, which are jewelled with sapphires and rubies. York roses occupy the outer border, and trophies, illustrative of commerce and navigation on one side, and law, justice and liberty on the other, occupy the interspaces where the arch leaves the door frame. On the top of the front is placed in the centre the sheriff's seal of Hull. At the sides of this are two figures finely modelled and chased, and representing respectively commerce and justice. The lower panels of the doorway have gilt decoration, one being the crest of Mr. Robson, a boar's head in pale, and the other his monogram in enamelled letters. A large shield, enamelled with the arms of Hull, is given on the centre of the door, and forms a means of opening and closing it. When the door is opened an elaborate address conveying the thanks of the Borough of Hull to Mr. ex-sheriff Robson is disclosed. At the foot of the address is a ribbon attached to the seal of the Borough, which is pendant from it, and is contained in a silver gilt box. The address cover is made to stand on a table, having an easel arrangement, by which it can be supported in position, and makes quite a striking and original ornament .The same firm executed the order for the casket which was presented by the Corporation of Kingston-upon-Hull to the Lord Mayor Savory.

Sir John Bennett, Limited.

AN extraordinary General Meeting of the shareholders of Sir John Bennett, Limited, was held at Winchester House, Old Broad Street, E.C., on the 7th ult. E. L. Moore, Esq., presided. The chairman stated that the committee of investigation appointed at the last meeting had completed their report, and it now only remained for him to introduce Sir Joseph Weston to the meeting, who, being chairman of the committee, would explain more fully the position of the company. Sir Joseph Weston, in proposing the first resolution, "That the report of the committee of investigation be received and adopted," said that the committee had been nominated by the shareholders to investigate the affairs of Sir John Bennett, Limited, and in laying their report before the meeting he wished it to be distinctly understood that the committee had no purpose of their own to serve in the matter. (Hear, hear.) The committee had attended a great number of meetings, assisted by their able accountants, Messrs. Gane, Jackson, and Jeffreys; and they had thoroughly investigated the affairs of the company. During their investigations it had been made perfectly clear that the statements of the prospectus had been most flagrantly inaccurate from the beginning to the end. He might say that the prospectus contained statements put forward by those interested with Sir John Bennett in the sale of the business, and it seemed that none of the parties connected with the newly-formed company ascertained whether the statements put forward in the prospectus were correct or not, and that scarcely any step was taken worthy of the name that had for its purpose the examination of, and the valuation of, the various assets of the company, with the view of serving or protecting the interests of the company. The prospectus stated, amongst other things, that the business of the company for the last ten years before it was taken over had made an annual gross profit of £14,000 a year, and that its net average income amounted to over £8,100 a year. The committee found that no books existed, and that no stock-sheets existed that would enable the committee or their accountants to investigate the affairs of Sir John Bennett, Limited, with a view of ascertaining what were the average profits made over a longer period than six years. For six years before taking over the business the books had never been kept at all accurately, but during that six years they had been able to ascertain what were the gross and net profits, with the result that the gross profits represented about £10,000 a year, and the net profits about £2,780 a year for the six years; but they found also that the business had not kept up what it was in former years, and that during the last three years before the business was taken over the net profits did not exceed £1,500 a year. The shareholders were aware that the sum paid by the company to Sir John Bennett for taking over the freehold and leasehold premises and stock-in-trade and goodwill of the business was £66,000, but something else which the committee had discovered was really not revealed in the balance-sheet, and that was that £39,000 was agreed to be paid to Sir John Bennett for the goodwill of his business. Now, the directors, after they had some few months with the business, found the profits much less than they expected, and they sought to make some arrangements with Sir John Bennett concerning the matter. In November, 1889, an agreement was entered into to the effect that they should pay Sir John £5,000 net, and give him an annuity of £600 a year; but at the time that agreement was entered into the company had already paid in cash to him £45,868, and that there was due to him £20,132. At that time the company could have paid to Sir John a large part of that money in "B" shares. Sir

John had agreed to take his money in these shares that had been allotted, so that the only cash they need have paid him at the time of this agreement was £6,000; but instead of the directors carrying out the original agreement they absolutely agreed to pay him not only £5,000 in cash, but also an annuity for life of £600 a year. It seemed that before the company was formed an agreement had been entered into between Mr. Wright, the former chairman of the company, and Mr. Davis, the solicitor to the company, and Sir John Bennett, by which the two first-named gentleman had to receive £19,000, partly to pay the promotion and floating expenses, and the remainder for their own absolute use and benefit. (Cries of "shame.") He might also mention that this agreement was not even mentioned in this prospectus. There were no means whatever by which those who applied for shares could have known of the existence of the agreement, and it was only at a later period, when a deed was being prepared to carry out a certain compromise, that this private agreement was brought to light. Although this compromise had been made, the committee felt compelled to express the opinion that it would never have been sanctioned by the shareholders had all the circumstances now within their knowledge been before the meeting when the scheme was approved. (Hear, hear.) As matters stand Sir John Bennett had virtually received £21,346 for goodwill. This sum was, of course, in excess of the true value of the business. The committee had come to the conclusion that the total assets of Sir John Bennett at the time the company was formed were not worth so much as set down in the balance-sheet, £24,000. The result of the investigation of the accounts and the position of the company led the committee to express an opinion that the capital of the company ought to be reduced by writing it down to an amount that would show the assets of the company at their fair value—(hear, hear)—as such reduction would give to the company a better financial position. The practical outcome of the investigation was shown in the recommendations that they made, which were briefly set forth in their report, namely, that at least two new directors be added to the board—(hear, hear)—that the accounts presented by the directors at the general meeting of April 14th last be not adopted, but that the revised balance-sheet, as at February 28th, 1891, presented by the committee, be approved and passed. That the jewelry department be thoroughly reorganised, and that the business thereof be transferred at the earliest convenient date to the freehold premises, No. 65, Cheapside. That a system of accounts be adopted which will readily lend itself to a thorough periodical audit, and that the accountants be instructed to organise such system. That in future the accounts of the company be audited by professional auditors. That the expenditure of the company be very carefully considered, with a view to putting a stop to all unnecessary outlay. That the necessary steps be taken to reduce the capital of the company by two-fifths of the nominal amount thereof, so that each "A" share will be reduced to £3 fully paid; each fully paid "B" share to £3 fully paid; and each £3 paid "B" share to £1 16s. paid with a liability of £2; and that, on the reduced capital, dividends be payable as follows:—A preference to the "A" shares of 8 per cent.; then the "B" shares to be entitled to a dividend up to 8 per cent., any surplus remaining to be divided so that an equal dividend be paid on both "A" and "B" shares. That the articles of association be altered in such respects as may be necessary to give effect to these recommendations, and to enable the business of the company to be carried on with greater efficiency and economy. In the past the best interests of the shareholders had not been protected. The committee still felt that, notwithstanding the high price they had paid for the business, there was great value in the concern itself. (Applause.) It was a good business, and if it could be managed with efficiency and economy, and with a spirit of enterprise, he believed it could be made a successful concern. (Hear, hear.) He then simply moved that the report of the committee be received and adopted. Mr. H. W. Lofthouse seconded the motion, and remarked that, as expressed in the committee's report, the company had a really good business, and with fresh management, together with the reduction of the capital of the company, it would become a prosperous concern in the future. The motion was carried unanimously. Sir Joseph Weston moved the adoption of the balance-sheet as audited by the chartered accountants engaged by the committee. Mr. Lofthouse seconded this motion also, and it was carried unanimously. Mr. Lofthouse and Mr. Brachi were elected to seats on the board. On the motion of Sir Joseph Weston, seconded by Mr. Hewitt, the recommendations contained in subsections "c, d, e, and f," of the recommendations of the report of the committee were adopted. Sir Joseph Weston moved, and Mr. Baume seconded, that Messrs. Gane, Jackson, and Jeffreys be appointed auditors to the company for the ensuing year. This motion was carried unanimously. A discussion ensued on the conduct of the directors, and, as they had placed their resignations in the hands of the committee, it was decided that they should be accepted. Messrs. Moore and Hendry, two of the old board, were re-elected. Great pressure was brought to bear upon Sir Joseph Weston to induce him to join the board, but he declined to accept a seat in consequence of other pressing engagements. Respecting the reduction of the "A" and "B" shares, a resolution was adopted to the effect, "that the necessary steps be taken to reduce the capital of the company as recommended." The meeting was subsequently made special, when certain alterations in the articles of association were made to still further carry out the recommendation of the committee. A hearty vote of thanks was passed to the committee (special mention being made of Sir Joseph Weston) for their services. A vote of thanks was given to the chairman at the close of the proceedings.

In and Out the Courts.

The case of the lensefront clinical thermometer has been brought to an issue in the High Court of Justice, Queen's Bench Division, before Mr. Justice Charles. It appears that there was originally an agreement between Mr. Hicks, Mr. Denton, and Luigi Peroni in 1886, which bound them to adhere to a certain price for the thermometers. It now transpires that Mr. Denton has broken that agreement, and has been supplying them at a less price. The action, however, was stayed upon the following terms: (1.) That the defendant pay £200 damages and legal costs. (2.) That the defendant take back the thermometers, which Mr. Hicks bought through other persons from the defendant. (3.) That a perpetual injunction be granted against defendant to restrain him further breaking the terms of the agreement, and defendant to make full disclosure of all thermometers illegally sold by him at a higher rate of discount than five per cent.

At the Mansion House on August 7th, Reginald Lumbly, 20, a solicitor's clerk, was brought up on remand for obtaining by false pretences from Messrs. Reece, Mansion House-chambers, jewelry to the value of £117. Mr. Geoghegan, for the defence, in cross-examination of the prosecutor, elicited the facts that he (the prosecutor) had been twice a bankrupt, and that his discharge had recently been suspended for two years; that he had backed a horse for the defendant, and that he told him he could pay for the jewelry when he liked. The Lord Mayor in dismissing the charge said he hoped it would be a warning to the defendant to avoid such transactions in the future.

Notes About Town.

Trade of the Month.

August is never considered to be a month of great things, or even trade at all in the West End, so that if little is done no one is much disappointed. Judging, however, from all accounts, there is little to grumble at in the trade of the month. Many report they have been busy, and most people say "must not grumble for August." In the manufactories they appear running at full speed, and Christmas novelties are now on the *tapis*. One house, not a hundred miles off the mother church of the old watch parish, known as the largest and best house in the trade for pearl work, is just as active—and, if possible, more so, considering the extensions of its premises—as it has been for years past, and novelties this year are by no means behind those of other years, either in quantity or excellence of design. We notice they are employing turquoise very freely, of which beautiful gem they have probably the finest in the trade. In the West End the manufacturers are divided in their reports, some stating they are very busy, others being inclined to grumble.

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The productions of to-day.

However the archæologist may rave, or the *connoisseur* prate about the beauties of the works of foreign lands and distant times, no one who knows what he is talking about can produce from any period specimens of *bona-fide* ordinary work of the jeweler which can equal in artistic merit, conception of design, and excellence of finish, the productions of tinted golds and platinum, known as emanating from the old Newman Street firm. Some of their latest productions that we have seen about in the West End windows make one feel—as jewelry hardly ever does—as though they ought to be framed.

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Fresh Season Novelties.

Nothing has surprised us more, perhaps, than the little advantage that jewelers, up to the present, have taken of the deep secrets of the laboratory which Professor Roberts-Austin has made public property. He has shown that almost any color can be obtained with gold variously alloyed and treated, including colors heretofore unknown: as bright purples to almost white, greens, bright ruby and other reds, blues, in fact, almost any color, and yet how little of it is to be seen! It therefore seems to us that an immense field lies open here for Christmas novelties. Enamels, flowers, and moonstones have had a good run, but it cannot be expected that they can command the sale next season they have heretofore enjoyed. A run might easily be made on "the new purple gold," as when finished matt it sets off diamonds remarkably well, producing an effect with diamonds not attainable by any "waters" or treatment that are resorted to.

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Fashionable Clocks.

The magnificent finds of "Mexican Onyx" have resulted in the bringing a lot of very beautiful clocks, vases, inkstands, and scores of other things in that handsome material into the market. Those mounted with ormolu appear to secure the best run. There are also a number of art pottery clocks now being sold, the beautiful cream ground, with gold and soft-colored flowers make exquisite objects of classic design. With the early English, old blues with characteristic treatment are resorted to with marvellous effect. Messrs. Doulton and several others of the art potters are also turning out some most imposing clock sets, with the characteristic features of their wares. Manufacturers of high-class clocks are recommended to pay a visit to the Lambeth Pottery, where cases in a variety of wares and styles can be obtained.

A New Opera Glass.

There is a new opera-glass that, we are informed, is finding a good sale, called "The Collapsible," its body being of bellows construction upon a folding metal frame, which holds it perfectly tight, and allows it to fold up to only rather more than the thickness of the six lenses employed in it, so that even a large field-glass can be comfortably put into the breast pocket. Although this object has been often tried before it has always failed to become popular; this, on the other hand, appears to give every satisfaction.

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Colored Stones to the Front.

The marriage of Count de Talleyrand formed a rich harvest for jewelers in Paris the last two months, and here and there an order reached London in connection with it. M. Dumoret, of the Rue de la Paix, came in for the lion's share. M. A. Dumoret received the finishing touches of his business-training at the celebrated establishment of Mr. Streeter, of New Bond Street; and a list of some of the articles supplied by the French firm is a specimen of how things are done in the gay city. The present of the bride's mother, the Princess de Léon, consisted of a morocco case, containing a diamond cable-bracelet, set with a black pearl in the centre of each link; brilliant and pearl trefoil; sapphire and pearl brooch; and a sapphire and diamond crescent. The Count, amongst other things, presented a magnificent diamond necklace; a coronet of single diamonds, surmounted by a star; a most elaborate crescent necklace of diamonds and pearls, with a primrose pendant of diamonds and colored stones; three exquisite large pearls, mounted as a brooch; besides sundry pendants and bracelets of colored stones. The Viscount and Viscountess Aguardo, grandparents of the groom, gave a charming piece of diamond work in the shape of an ostrich feather. Perhaps one of the most exquisite sprays was composed of wild roses, tied together with a ribbon in true lovers' knots. There were a large quantity of other gem presents, in which colored stones played a most important part. At other weddings and grand balls colored stones are still very prominent.

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Plate presented to Mr. H. S. King, C.I.E., M.P.

A handsome testimonial has been presented to Mr. H. S. King in recognition of his successful advocacy of the claims of the European Civil Service of India resident in England. The testimonial consists of a massive silver centrepiece, a pair of *Assiettes Montées*, and a pair of candelabra to match. The centrepiece, with its oval-shaped base and beautifully chased acanthus-leaf edge, surmounted by two finely-modelled figures, emblematical of Music and Art, is a magnificent specimen of the silversmith's art. Rising from the centre of the base is a beautifully-chased column, supporting a candelabrum and two double side branches, which hold four richly cut glass dishes for fruit or flowers. The candelabrum may be removed at pleasure and replaced by a beautifully-chased silver bowl, supporting a large and handsomely cut glass dish. On the base of each of the *Assiettes Montées* are seated two finely-modelled cupids, with musical instruments in their hands. The service is a highly-finished piece of work, and reflects the greatest credit on the manufacturers, the Goldsmith's Alliance (Limited), 11 and 12, Cornhill, London, E.C.

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At the late examinations in Watch and Clockmaking held by the City and Guilds of London Institute the following prizes, offered by the Goldsmith's Company, were awarded as follows:—The first Honors, of £3 and a silver medal, to J. F. Ludwig, of the London Horological Institute; the second, of £3 and a bronze medal, to William K. Smith, of the Heriot Watt College, Edinburgh. The first prize in the ordinary stage has been taken by Alexander Russell, of Robert Gordon's College, Aberdeen; the second prize has not been awarded; the third prize has gone to Cyril H. White, of the Coventry Science and Art School.

Birmingham Notes.

(By our own Correspondent.)*

WHILE it is impossible to give anything like an accurate statement as to the state of trade just now, it is, however, safe to say that business so far, since the holidays, has in most cases exceeded expectations. The majority of firms are resuming the bustle and activity that is characteristic of the Birmingham trade, but in some quarters it is feared that the "welcome rush" is destined to be of an ephemeral nature only, and that a substantial and permanent improvement cannot be counted upon until we are well into September.

IN many branches of optics trade was very busy up to Bank Holiday, and by the time men got back again to work orders had accumulated, which the rest of the month has been unable to pull up; perhaps the thermometer trade experienced the greatest rush, the spectacle frame makers being also well employed.

MESSRS. AHRONSBERG BROTHERS, of 37, Albion Street, the Jobbing House of Birmingham, have shown us over their new and extensive premises, which, owing to the considerable increase in their home trade, has necessitated their taking. Special provision has seemingly been made for the keeping separate of each of their departments, which, through the volume of business to be dealt with in each, compels them to keep apart. Ample space is provided for the Jobbing Department in a room measuring 40ft. long, with a workshop attached of the same dimensions, whilst the appro. and order departments are conducted in large and equally well suited rooms. We had the pleasure of inspecting the well selected stock which they keep at home for their immediate requirements, and which in itself testifies to their doing no small business. They claim as the secret of their success the conducting of their home business under their own personal supervision, first-class workmanship, and the great promptitude with which all business is despatched. In wishing them every success we can confidently recommend shopkeepers to favor them with an trial.

THE composition used in the manufacture of gold-cased chains by Messrs. C. Baker and Son, marked with the initials

C. B. & S.
B.

is of the firm's own production. It is the best metal possible for the purpose, the color is exactly that of bright gold, untarnishable, and all through alike. This is thickly cased with "Colombo Gold," and when finished cannot be detected from 18 carat without great difficulty by the ordinary buyer. The surface is perfectly smooth, bright, and free from the roughness always observable in plated jewelry. No wonder the demand that has arisen recently should necessitate a large section of the establishment being devoted entirely to its production.

In addition to their speciality, the ladies' and gentlemen's gold-cased chains referred to in the preceding paragraph, they are now showing a quantity of match-boxes of various designs, well plated, on B.M., at a price that almost seems incredible.

MR. J. H. STARLING is removing to more extensive premises at No. 8, Augusta-street, over against No. 44, his late address.

A FIRM who certainly does great tribute to enterprise is that of Mr. A. Sydenham. A day or two ago we inspected some novelties in jewelry, &c., which he has for some time past been engaged in preparing. Evidently from the quantity of goods newly stocked a big sale is anticipated directly, and, moreover, we understand the diamonds, rubies, and sapphires displayed by Mr. Sydenham for our inspection would be, in the course of a couple of weeks or so, mounted in brooches and ladies' rings in further new patterns.

MR. W. H. JOLLY, of Mansfield, has been entrusted with the order for the production of the costly and magnificent mayor's chain, the gift of the Duke of Portland, to the Borough of Mansfield. Though unable to avail himself of the invitation of the corporation to become their first mayor the duke has allowed his goodwill and generosity to extend itself by presenting one of the finest chains of office to be found in the kingdom. Messrs. T. and J. Bragg, of Vittoria-street, Birmingham, have designed and are making this handsome piece of civic jewelry for Mr. W. H. Jolly, the well-known jeweler of the town. They are also at present occupied on a mayoral chain for Leominster. This is a very quaint piece of workmanship designed to represent the historical associations of the borough, and is executed in the mediæval style with a number of shields upon which are engraved the names of the mayors of that ancient corporation. There is also a very quaint vessica-shaped badge having the seal of the borough in the centre. The central link of the chain from which the badge depends is larger in form than the rest of the links, and is supported by civic maces—one on each side—and contains the monogram of the Mayor (Mr. Wm. Plummer) beautifully enamelled. The chain is intended for the official use of the mayors of Leominster, and is wrought in gold and is of the most exquisite workmanship. On the seal of the borough attached to the chain is the inscription, *Sigillum Commune Leoministree.* The seal, which is something like six hundred years old, represents a mayor holding the corporate seal in his left hand, and in his right an ancient mace. The badge will be presented to the Corporation of Leominster on the 10th of August, by Mr. Rankin, M.P., together with the chief steward, the mayor, and the town clerk.

THE "Invicta" brooch, produced by Messrs. Harvey and Co., of Frederick Street, Birmingham, as shown in his advertisement, finds a ready sale. We notice it exhibited pretty freely in the shop windows, which presages well for an article of such recent introduction.

WHEN firms allow customers a certain period of credit it is quite a general custom to book orders ahead some time previous to the end of the month or quarter. The following incident, which we can vouch for, struck us as being pregnant with the utmost "cool cheek" conceivable:—A customer of a firm upon being "whipped up" for the seventh and last time in the usual stereotyped "solicitor-threatening" phrases, most ingenuously, and in all good faith, replied to the effect that "if you would have the kindness to draw upon me at three years you will be conferring a benefit, &c., &c." If business on these terms is to become rife in our midst we may after all congratulate ourselves that we are not without a fair sprinkling of those "gentlemen of means" who are quite prepared to convert our paper into money for a small (?) consideration.

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At Birmingham, Albert Richardson was sentenced to six months' imprisonment for larceny as bailee of watches left with him to repair.

At Leicester a serious charge was made against William Jobson, 20, Haymarket, of conspiring with J. W. A. Redhouse, and obtaining by false pretences a large quantity of jewelry from various firms. A remand was granted.

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* We must not be considered as endorsing all, or necessarily any, of the statements of our correspondent, who writes on his own responsibility.

Sheffield Notes.

(By our own Correspondent.)[*]

THE Cutlers' Company, as everybody knows, is not now wholly composed of cutlers. Steel manufacturers and silversmiths have of late years had their full share of the honors which the company has to bestow on its members. It is interesting to note, therefore, that the Master Cutler-elect is not only a *boná-fide* cutler, but a member of a firm that dates from the early years of the last century. Mr. Robert Belfitt, of the firm of Messrs. George Butler and Co., of Trinity Works, who has just been unanimously elected Master Cutler for the ensuing twelve months, has held the office of Senior Warden for the past year. The firm of which Mr. Belfitt is a controlling member has had an important history as regards trade-mark matters. In the middle of the last century Messrs. George Butler and Co. carried to a successful issue an important piece of litigation in defence of their own rights as proprietors of a certain mark. The Master Cutler-elect, therefore, cannot fail to have imbibed that spirit so essential to the proper discharge of the most important functions of his coming office. For the rest there is no reason to suppose that the more social duties which fall to be discharged by the Master Cutler will suffer at the hands of Mr. Belfitt. The Cutlers' Feast is fixed to come off on the first Thursday in September.

EVIDENCE of a real advance in artistic taste is seen in the cards of invitation to the Cutlers' Feast, which are now being sent out. They take the form of an old English revival, with their black letters and red initials, rough paper and untrimmed edges. The card will make an appropriate souvenir of what will be the 268th Cutlers' Feast.

A GATHERING of an interesting character has just been held at the Cutlers' Hall, at which Mrs. Colver was the recipient of a most appropriate present. It consisted of an album containing the photographs of the children present at the fancy dress ball given by the Mistress Cutler in February last. The presentation was made on behalf of the parents, who were present in full force, and was accompanied by all those accessories of music, flowers, and general good taste for which Cutlers' Hall gatherings have been of late years so conspicuous.

THE majority of firms in the silver and electro-plate trade are still busy. The demand for novelties on the part of shopkeepers is being met with more or less of taste and ingenuity. The proportion of silver goods as compared with electro-plate continues to increase. The turning-point of the season being close at hand, manufacturers now consider the prosperity of the trade up to Christmas as being pretty well assured. Any misgivings to the contrary have been caused solely by the less favorable outlook as regards the iron and steel trades.

AMONGST opticians since Bank Holiday there seems to be a good deal of grumbling, not so much for want of trade as from the difficulty of getting work from manufacturers; while the manufacturers are saying they cannot do impossibilities, which looks as though things were fairly satisfactory. There is no doubt that in every town throughout the kingdom far more optical goods are sold; especially is this the case with photographic apparatus and microscopes.

I AM sorry to see that the address, "Sheffield, England," which some manufacturers are beginning to strike on their goods, has a foundation of necessity for its existence which is likely to render the outlandish innovation a permanent one. It seems that there is a Sheffield in America and another in Germany. As, therefore, the ingenuity of these enterprising nations is not unequal to the task of creating in these places firms bearing the same names as those with which we are familiar, it behoves manufacturers here to frustrate the transparent trick. Hence the new form of address, which may strike some as merely a piece of questionable taste.

A RETURNED traveller has been "writing to the papers" on the subject of the villainous table cutlery in use in the United States. It has been pointed out to him, however, that he is laboring under a delusion in supposing that table knives in America are intended to cut. The Americans, it is said, don't cut their meat—they rend it. The carvers in use there, which are unmistakably English made, are made of good steel, and of course cut well. The sore place is, however, that the table cutlery is stamped with the name of "Rodgers"; and although the particular "Rodgers" is not specified, yet Messrs. Joseph Rodgers and Sons, of Sheffield, are naturally not at all satisfied that liberties are not being taken with their name.

SOME samples of "German rubbish," stamped with the name of Sheffield, have recently come to hand. These goods, it has been found out, are mainly sold in the Dutch East Indian settlements. Several of our manufacturers have therefore determined to register their trade marks in these countries, which will probably put an end to the little game of the astute foreigner.

THE silver shield which Mr. H. L. Brown is giving to be competed for among the Ambulance Societies of the town promises to be a fair specimen of art workmanship—that is, if the execution equals the drawing now on view. It is divided into a series of panels, in which are representations of the different trades of the town—especially those most liable to accidents, such as forges, grinding wheels, and so forth.

MR. A. M. CHAMBERS, of the firm of Newton, Chambers, and Co., is of opinion that 30 per cent. of the essential element of coal is wasted in the form of smoke. This fact is of interest to those manufacturers who are now finding their profits swallowed up in the enhanced price of fuel. It also possesses a languid kind of interest to those sanguine people who anticipate the abolition of the smoke nuisance in the near future. This may account for the latter question being once more broached in the Town Council. The result, however, cannot be said to have advanced the problem any nearer a solution. Member after member got up to detail his experience in the way of testing infallible remedies. The outcome of the discussion conveyed the impression that every one of the expedients for economising fuel and preventing smoke was a manifest failure. The millennium, therefore, is not yet.

AMONGST the novelties we recently noticed at Truro works, we thought the new grape-stands very effective, and, if we may say so, a great improvement upon those first brought out. The employment of the art porcelain plates gives them a point, while the graceful sweep of the stand gives them a characteristic feature which removes them further from anything that has preceded them. Their numerous productions of silver flower vases, of various sizes, from mere tubes up to fifteen inches high, we know from the trade are finding a good sale in town, especially amongst foreign buyers.

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[*] We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Watch and Clock Making.

(Continued from page 27.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making.

(II.)—Advanced Paper, 1890.

TO avoid complication this line is not given in the diagram, but the delivery edge T is supposed to be on the line W D′, and at the angular distance of ½deg. from the periphery in reference to centre P. With the line P R measure off the angle J P R = (2 — ½) = 1½deg. Where J P cuts the arc N F′, A will be the edge of the locking arc of the disengaging pallet, that is F′. Join F′ T, and we have the disengaging driving plane; and the pallet is complete, with the exception of the arms and base, which is sufficiently apparent from the diagram.

The method thus described may be very well applied for making pallets practically, thus:—First draw the line A M T, touching the locking arc at A, and delivery edge at T, and draw P M perpendicular to A M T. The practical application involves a system of definite measurement. For this and similar work I find the millimeter gauge with a decimal Vernier most convenient, because the units are small and therefore a decimal ·05 of a m.m. (which can be read on a vernier of ten divisions), sufficiently near for all general work. (I will not enter on a further description of such a gauge now, but tender any information that may be asked for with regard to its use.)

Measure both the radius of the escape wheel of a drawing (which should be made carefully and as large as possible), and the radius of the escape wheel for which the pallet is required; let a stand for the first and a_1 for the second, and b for the distance of P M. Having selected a piece of good steel sufficiently large (what provision must be made that it is so, will appear from inspections of the diagram given above), Select the point P and either centre it with a fine punch, or drill a hole and insert a temporary stopping with a fine hole, so that there may be no error of measurement, as may occur if the centre is bad or the hole large. If the first mode is used, the hole must first be drilled with a small drill, and then followed by a larger and a turned drill, so that the hole does not run out. Our first object is to find the distance of the line, corresponding to A T, from the centre thus marked. Let x denote that distance, then by proportion

$$a : a_1 :: b : x$$

whence

$$x = \frac{a_1\, b}{a} \quad . \quad . \quad . \quad . \quad (a)$$

I may mention, for those that do not know it, that in any algebraic or symbolic expression where any number of letters stand each for a quantity, and are unconnected by any sign, it always means that when the quantities are substituted they would have to be multiplied; thus a, b means $a \times b$. For example, suppose the radius of the escape wheel in the diagram measures 100m.m. and the radius for which the pallet is required 16; and that P M in the diagram is 80m.m., then for (a) we have

$$x = \frac{16 \times 80}{100}$$
$$= 12{\cdot}8\text{m.m.}$$

which means that the distance of the straight face corresponding to the line A M T, for the solid material, from the centre of the pallet is to be 12·8m.m.

I may as well observe that this is the final measure. Hence a margin for this and all other measures must be allowed for the process of polishing, which quantity again depends on the skill and practice of the workman.

The next measure will be the arc T K. Let c denote its distance from P in the diagram, and x_1 in the solid material; then again

$$a : a_1 :: d : x_1$$

whence

$$x_1 = \frac{a_1\, c}{a} \quad . \quad . \quad . \quad . \quad (\beta)$$

In similar way let d and x_2 denote the respective measures corresponding to the arc A E, then again

$$a : a_1 :: c : x$$

hence

$$x_2 = \frac{a\, d}{a} \quad . \quad . \quad . \quad . \quad (\gamma)$$

Then we proceed to determine the inclination of the driving plane A O. First produce (very carefully) A O, and draw the perpendicular P V, and measure the distance P V, and denote this by e, and the corresponding measure for the solid pallet by x_3, then, as before

$$a : a_1 :: e : x_3$$

whence again

$$x_3 = \frac{a_1\, e}{a} \quad . \quad . \quad . \quad . \quad (\delta)$$

With the measure x_3 describe a circle on the solid pallet, and draw a line from A, touching this circle; thus, if the pallet is filed down to this edge it gives the direction of the driving plane A O.

In just the same way draw T F′ R′ and the perpendicular P R′; let the latter be denoted by f, and the corresponding one with solid material by x_4, then

$$x_4 = \frac{a_1\, f}{a} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (\eta)$$

which is to be used identically in the same way as x_3 in (δ).

Lastly, the locking arc F′ N and inside arc O S have to be determined, which is done again by taking P F′ and P O respectively as the third terms in the proportion.

I may observe that to ensure the arcs A E and F′ N being true they can be completed in the mandrel.

After this it will be expedient to adjust them finally practically in connection with the wheel, especially by reason of these necessary margins. For this object I do not recommend the depthing tool, because, unless special optical appliances are used, it is difficult to observe the action sufficient.

The appliance I find more handy is as follows:—Take a rectangular flat piece of brass, and mount a stud carrying either wheel or pallet, and fix a stud, on to which the pallet is placed friction tight. A small platform moving in dovetails then carries a stud which supplies the centre of the wheel, and thus the action can be very conveniently observed. Before they are smoothed with a steel polisher and oilstone dust there ought to be no or scarcely any drop, as that process generally will give sufficient. In making the final adjustment before the operation last described it is important to observe the following geometrical conditions:—If the pallet spans over very few spaces—say, not more than four—any alteration in the depth scarcely affects the drop. On the other hand, if the pallet spans over about ten to eleven teeth, varying the distance of the centres affects the drop only, and the depth scarcely at all. Between these extremes any variation in the distance affects both the depth and the drop, so that any alteration for the depth involves opening or closing of the pallets, and, conversely, opening or closing involves an alteration of the distance of the centres.

These conditions require to be kept well in view during the final adjustment, otherwise very likely the operation will be a failure. I do not think it necessary to harden the pallets beyond the scaping action, and leave that part dead hard.

I use another method of making pallets from calculated tables for those who do not care to make drawings. But the above is a more universal method, and is applicable to every kind of pallet and of all dimensions. With a little practice a drawing is made comparatively in a few minutes, and provides a safe and systematic method.

The arcs E A and F′ N, and the driving planes A O and F′ T, should be well polished or jeweled, and no emery used at any time.

(*To be continued.*)

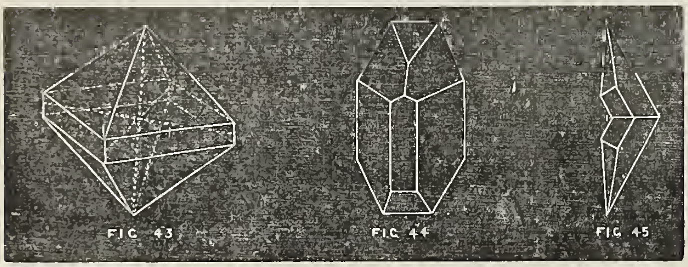
The Crystallography of Gems.

By the Editor.

(*Continued from page* 28.)

The Monoclinic System.

The Natural Forms of Sphene.



WE are now introduced to a new feature in crystallography; in the mono-, di-, and trimetric systems the axes are all at right angles to each other, giving rise to great bi-lateral symmetry. But with the two clinic systems to follow, the axes are not all at mutual right angles. In the monoclinic one is inclined; and in the triclinic all three are inclined to each other. Now the amount of the inclination of the axes varies in different species, giving rise to forms whose outlines are very dissimilar. When, however, the inclination of the inclined axis is not far removed from a right angle the resultant forms are scarcely distinguishable from those belonging to the last described system, which has indeed induced some crystallographers to regard the two clinic systems as varieties of the trimetric; a hypothesis, however, which cannot be mathematically supported, and which would indeed subvert the whole science of crystallography, as we should find out should we study the higher branches of gemmology and microscopy.

In the monoclinic system there are three axes of unequal lengths, as in the trimetric; but differing in that, instead of lying all at right angles, one is inclined to one of the others. The vertical axis being taken as the principal, the axis which is inclined to it is called the clinodiagonal, and the other which lies at right angles to it the orthodiagonal. On account of the obliquity thus produced the faces are not bi-laterally symmetrical; the anterior and posterior prismatic planes are unequally inclined to the basal plane, and the front and back planes above and below the middle of figures differ in size and form. On referring back to fig. 34, it will be observed that the building up of a double pyramid upon three unequal axes at right angles gave rise to a figure with eight triangular faces: two pairs above the girdle and two pairs below, being equal to each other. If, however, the axis *b* of that figure were lifted up at the back, *i.e.*, inclined to the vertical, it is evident that they would alter the shape of every face upon the crystal; nor would the larger faces any longer be isosceles triangles, but scalene, and the face *a b c* on the right would become smaller than the face *a b c* on the left, in proportion as the obliquity was increased.

Now although, as a matter of fact, simple forms of this system are somewhat rare in the mineral kingdom we have good examples of them in the gem under consideration. Indeed, I think it might be said that as the Sphene excels all gems in fiery splendor (diamond included), just so does it exceed all others in variety of forms. It is a great pity it is so little known and so rare, but as the Sphene was not known till the early part of the present century it is partly to be accounted for. Like many other gems it is usually found in more or less water-worn pebbles; but crystalline faces are often present, which serve to distinguish it from spodumene, olivine, andalusite and chrysoberyl pebbles, and which it sometimes roughly resembles. Its name is from *σφήν*, a wedge, in allusion to the wedge-shape form put on by many of its crystals both simple and highly complicated. A beautiful example of a simple crystal is given in fig. 43; it illustrates the differences pointed out when speaking of fig. 37. At first sight it might be mistaken for a form belonging to the trimetric system, but closer inspection will show that the two large front faces are not isosceles triangles, but scalene. Moreover, it will be seen that the two top faces are not equal, but that the top left is equal to the bottom right, and that the top right is equal to the bottom left. Otherwise it may be regarded as a prism upon a rhombic base formed by the narrow planes running round the centre, terminated by a pyramid top and bottom. Such a pyramid might rise in several steps, forming faces bearing different values to the length of the vertical axis: or it might be truncated by a basal plane which might be only a mere speck; or it might be a broad flat plane to the annihilation of the pyramid altogether. The front edge of the girdle might also be replaced by a plane parallel to the vertical or orthodiagonal axis, which also might be of any size, and if developed all round would quite destroy the present prism, producing another bearing the same relations to the former as exist between prisms of the two orders in other systems. The planes parallel to the orthodiagonal axis are called orthopinacoids, and those parallel to the clinodiagonal, clinopinacoids. They may occur either by themselves, or associated with planes of the other prism, and may further be modified by the alteration of its relation to the orthodiagonal axis, and so give the prism a faceted appearance. Further, the edges of the pyramid may be replaced in somewhat similar manner.

Fig. 44 gives an illustration in point. The three large median faces are prismatic faces; the two outside ones are similar to those in Fig. 43, whilst the central is an orthopinacoid; the next two faces in the zone above are pyramidal faces following upon the rhombic prism, and therefore the faces of the rhombic pyramid. It will be noticed that the centre face is not immediately followed by a pyramidal face, but is so a little higher, assisting to add to the chisel or wedge-shape aspect of the crystal. It must be remembered that the upper planes are equal to the lower planes of the other side, which together with other characteristics of this gem give it its wedge-shape, a feature so eminently characteristic as to distinguish it at a glance from any other gem. There are a large number of forms of crystals very different in outline, all of which may be immediately recognised by the flat wedge-shape aspect presenting a sort of sat-upon appearance.

The twinning and macleing in this system, which gives rise to such quaint and curious forms, must not be passed over. If we bear in mind that opposite planes in the same zone are not symmetrical, we shall be prepared to meet with very odd-looking forms. These are formed principally by revolution on the orthodiagonal, or on a vertical axis;

the former possibly being the commonest forms met with, one of which is shown in fig. 45, which is a thin elongated form with a re-entering angle along one side. Sometimes these forms are further united along their backs in double twins or fours. These re-entering angles are most remarkable. Often they look as though the crystal had had an angular furrow cut out along the centre of each face of the prism; sometimes it is only very small, but at others it is quite large. I would have illustrated this feature, but that it is difficult to show in outline. I would, however, refer the student to the magnificent set of models of this gem in the Natural History Museum, south side of the Mineralogical Gallery.

And, further, it may be remarked that this gem also occurs in hemimorphic forms, in which the planes of the opposite ends of the crystals become unlike, sometimes presenting quite heart-shaped outlines. One great feature to remember is that the basal plane is not at right angles to the orthopinacoid. Consequently in some of the more complex forms, what is really the basal plane looks more as though it might be a pyramidal face; but by remembering the obliquity of the axial intersections of the vertical and clinodiagonal axes these errors will be obviated.

(*To be continued.*)

The Diamond Fields.

(By Vaalite.)

ALTHOUGH in my last letter I described things here as being in a most complicated and unsatisfactory state, it is very certain they are much more so now. The affairs of the Wesselton mine are no more settled, and there are so many rumours, and such a number of conflicting actions being taken by so many parties, that one is quite at a loss to understand where it can possibly end. It is, however, very certain that the De Beers company, upon whose stability the price of diamonds hinges, are fully aware of the importance of the Premier (Wesselton) mine, and owing to the quantity of diamonds that have been put upon the market from other sources they have not sold a stone for two months. It is certain they have no easy matter in hand to maintain their position, as they are in bad odor in the eyes of a very large portion of the populace here, in fact, only the other night an attempt was made to blow up their offices with dynamite; whether this was done out of spite, or for the purpose of trying to get some of the valuable contents of the offices, no one can say, but most people are inclined to the idea that it was simply to show the unpopularity of the company, and not for purposes of theft. Be that as it may, the De Beers have offered £500 and the Kimberley Detective Department another £500 for information that shall lead to the conviction of the offender or offenders. Nor have several features which have recently developed tended to popularise the De Beers; firstly, they have given notice that the licences for *débris* washing will not be renewed, notwithstanding the efforts of Mayors and Corporations of Kimberley and Beaconsfield, who have brought the utmost of their pressure to bear upon the Government to resume possession of No. 2 area, which the Government as good as promised to do; but "De Beers" immediately announced that as soon as any Government notice appeared they should apply for an interdict. It will of course be seen that the position of the company is anything but enviable. They have been obliged to shut down two of the four principal mines, and so shut out a large number of laborers, who, in many cases, are standing idle; now, however willing they might be to allow them to wash the *débris*, it is certain that their recovering diamonds and putting them on the market must operate in the opposite direction to the policy of the De Beers company, and must tend to keep the market low: the average price now being about 27s. 6d.

It must not be forgotten that the diamonds now have to be actually mined; diamond digging is a thing of the past, so far as the old mines are concerned; and only a small quantity of the diamondiferous material can be employed, the other has to stand for pillars and roofs of the various levels, so that the procuring of diamonds is a very expensive operation. And then they have their shareholders to remember, as before any dividend is earned upon the £3,950,000 ordinary capital, interest has to be taken for £4,903,400 of debentures and other obligations. That people begin to realise this, is evident from the come down in De Beers shares; last year they topped £23, and now they have fallen below £11.

Secondly, it has long been feared that De Beers would buy up the Wesselton, and so deprive the public of the opportunity of working it; every action the company has taken has been watched with jealous eyes, and when none was visible suspicion seemed all the stronger. But the question is, what would they do with it? They would probably have to give a fair valuation for it, which might mean another million to their now over capitalised concern, and then to keep up their limited market they would either have to shut it down, or develop it sufficiently to shut down the other mines. Of course should the Wesselton turn out as productive as the other two mines now being worked, and there is nothing to show it is not—as 19,000 carats have been discovered in prospecting, to say nothing of those found by the rushers—being nearer the surface it could be worked much cheaper for a long time. It is perhaps this latter fact which embitters the public against the De Beers getting hold of the new mine.

Turning to the Wesselton mine itself, without troubling you with the conflicting order in which many of the phases presented themselves, I must point out a few of the circumstances connected with the rival claimants. Some of the cases have already been decided in the Superior Courts, but unfortunately the minor claims appear to have been settled first, which may have to be altered when the other cases are tried. Messrs. Siebel, Walsh and Eland, whose case will be heard next term, claim they are the original concessionaires, and that Ward was only admitted a partner upon payment of £2,000, but that not having very much faith in it, Siebel and Walsh left for Johannesburg. Ward, however, maintaining his belief, persisted with his working, but of course required money to do it; this was supplied by Messrs. Coronel and Lawrence upon certain deeds of agreement. This case has been taken first, and these two gentlemen have been awarded either a fourth or fifth share each. But Coronel was already greatly indebted with the bank of the Cape of Good Hope, to whom he ceded his interest. This it appears the De Beers bought, together with Lawrence's share, and further found the needful to carry the case against Ward. In this way the De Beers have become practical possessors of the mine. What sort of face the new trial may put upon this remains to be seen, as the new claimants claim three-quarters of the mine. There are also other claimants for shares with Ward in the mine, so that what his position will come out in the end is doubtful. Mr. Ward has now appealed to Her Majesty in Her Privy Council, where no doubt the whole case will be settled, and will turn out one of the most complicated trials on the rolls. But it seems very certain that the De Beers consider they will come out with the practical control of the new mine, and this is strengthened by the fact that Major Wollaston, an officer in their service, is now engaged with four powerful steam gears and 1,000 men to survey and define the mine on all sides, and have already proved it to be the largest and richest mine in the world.

Meanwhile the other mines all round are looking favorable. Messrs. Rhodes and Barnato have just purchased the whole of the Koffyfontein mine, and with another wheel-within-wheel appearance they have made Mr. Owen Hall, one of the principal *débris* agitators, manager of it. The returns of the Koffyfontein mine for April, May, and June show 845 carats, valued at £1,425. May 115¾ carats, valued at £1,790, and June 1,343 carats, valued at £2,162 10s.; which includes one of 33½, one 27, one 25, one 21, and one 17½ carats.

There is a large quantity of prospecting going on, and in several districts I hear of very favorable indications. That the diamondiferous pipes burst through the country in other parts besides Kimberley, Bultfontein, Du Toits and De Beers is certain, not only from the Augustine, but by the far distant Jagersfontein, and other outstanding mines; to say nothing of the fact that diamonds are found a long way up into the interior in river drifts, which must at some time have cut through diamond-bearing strata. Moreover the "yellow" and "blue" are reported in a number of localities where prospecting is going on, amongst which reference might be made to Gowie's Prospect, who have license to prospect over the Government estate; between De Beers and the cemetery they have sunk a shaft, and stones have been found in digging the graves from time to time, indeed it is maintained by many that the cemetery is a veritable mine.

The New Jagersfontein having now amalgamated with the United Jagersfontein, will start under new management on a large scale in October. The quality of the Jagersfontein stones is proverbial, but of course only a part of the stones sold as Jagers are river stones at all. The total of all the river diggings has probably never reached a hundred thousand carats in a year, the average price of which is nearly double that of Kimberley, In June, however, Jagersfontein put out 9,832 carats valued at £16,950, and even this is less than the average for the last three years.

Another prospector is energetically at work at Thompson's Kopje, which will probably turn out a second Wesselton.

Good news also comes from St. Augustine, where the blue is now of much better quality at 20ft. from the shaft.

The N.E. Bultfontein are still at work favorably, turning out about 5,000 carats a month, and greatly increasing the amount of blue upon the floors. An industrial exhibition is on foot in Kimberley, towards which the Government promise a grant of £1,000, Mr. Rhodes and Mr. Barnato £500 each, and De Beers Company intend coming out largely. Many people have left the diamond district and gone up country to the gold fields. I hear of marvellous discoveries which have been made by old diamond diggers, who are content at the present with only developing the reefs, and finding out their extent, some of the figures are enough to frighten one. If they are doing this it will account for July's return of gold not being quite so high. But a better future is in store for the Rand, as you will see if you watch the share list from now, when they are at low water.

The cost of the gold casket presented to the Emperor of Germany at the Guildhall was £262 10s.

At the Acadamy of Sciences, Paris, on August 3rd, M. Ernst Schéring read a paper upon induction inclination needles, in which he described a new magnetic inclination needle, by which he claimed it was possible to determine inclination with a probable error not exceeding 4·2″.

We are pleased to see the grand old name of Dollond is likely to maintain its supremacy. The premises at the top of Ludgate Hill being wanted for street improvements, the firm has moved lower down the hill, where, amongst other things, they have fitted up a room on the most elaborate principles for amateurs.

Transatlantic Jottings.

AMONGST the Watch Factory Notes one might mention the following: The Elgin Watch Company are exporting several hundred movements per month to the English trade, among them being a large number of a special 14-size key winder, gilt ¾-plate. (If this is so, we presume they are being sold as Elgin make.)

* * *

A NEW Watch Company, The Champion, was recently organized at Rockford for the manufacture of a watch for which is claimed a wonderful character, and which will be sold at about two dollars.

* * *

THE ever increasing development of the Crescent Watch Case Company has outgrown the present large factories at Brooklyn, and they are now about to remove to Newark, N.J., where they have secured a plot of ground four acres in extent, upon which they are raising a new five storey building. They have also purchased the silver case plant of the American Watch Company, which will be removed from Waltham to Newark.

* * *

THE Dueber Watch Case Manufacturing Company and the Hampden Watch Company, Canton, Ohio, are very busy with sufficient work on hand to last some time.

* * *

THE San José Watch Company are nearly complete with factory and cottages, and hope to have their watches out before September.

* * *

AN Electric Clock Factory will shortly be in operation at Danville, Ky., all the necessary capital having been subscribed.

* * *

RECENT legislation in America is causing some amount of additional expense and trouble in many quarters. The weekly paying of workmen might be quoted as one instance, as with piece-work, work is in all stages of development come pay day.

* * *

ANOTHER instance is the so-called "Anti-Trust" laws which have been passed lately, notably the one entitled "An Act to provide for the punishment of persons, co-partnerships or corporations forming pools, trusts, combines, etc.," which came into operation in July last. This Act provides among other things that "if any corporation, co-partnership, individual, or other association of persons whatsoever shall create, enter into, become a part or party to any pool, trust, agreement, combination, confederation, or understanding with any other corporation, co-partnership, individual, or any other person or association of persons, to regulate or fix the price of any article of merchandise or commodity, such corporation, co-partnership, or individual, or other association of persons shall be deemed and adjudged guilty of conspiracy to defraud and be subject to indictment and punishment as provided in this Act." Section 3 provides for penalties upon conviction of from 500dols. to 15,000dols. Section 6 provides that "any purchaser of any article or commodity from any individual, company, or corporation transacting business contrary to any provision of the preceding section of this Act shall not be liable for the price or payment of such article or commodity, and may plead this Act as a defence to any suit for such price or payment."

* * *

OF so serious a nature is this that some of the leading firms have sent out the notice that they have elected to cancel and terminate all contracts under which they have heretofore sold their products. And further, such organisations as the National Association of Jobbers in American watches have had to dissolve, as it was for this object, amongst others, that it existed, being formed six years ago for the purpose of promoting the best interests of the trade, and the settlement of a uniform price to the wholesale and retail dealers. At the last meeting of the Association, convened for the purpose of rescinding its former laws, and reorganising the Association under another name, the Secretary remarked that there was probably no occupation that offered more opportunity or greater temptation to practice deception and impose on the public than the watch and jewelry businesses; and paying a well-earned tribute to the mother country, he contrasted it favorably with the U.S., observing that in England and other countries the Government educated the people by compelling the use of a hall mark denoting quality. In the U.S. there was no such protection, and the members of the National Association proposed and desired to deal only in such goods as had recognised merit.

Obituary.

We regret to record the death of a well-known scientific optician, Mr. John Mayall, Junr. As is known to most of our readers, he was not only a great master of the photographer's art, but he took a very prominent position in the scientific world, and contributed many very valuable papers both practical and theoretical. He was also one of the Secretaries of the Royal Microscopical Society. Going out in a shower he got wet and caught a cold, and, sad to say, he was dead in three days!

Death has also snatched from us a man of great promise in the person of Mr. Willoughby Smith, whose researches in connection with selenium were looked forward to by many, pointing as they did to seeing by electricity, and demonstrating the practicability of the "telephote." Whether this property discovered by him in selenium, of having its resistance lessened when a ray of light falls upon it, will be discovered in any other substance to a degree sufficient to be made use of, time only can show, but let us hope it will, as selenium is now both rare and costly.

Mr. A. Braxton Hicks, the Mid-Surrey Coroner, held an inquest at Abbot's Dene, The Green, Richmond, Surrey, touching the death of John Cockburn, aged 59 years, a jeweler, lately residing at the above address, and carrying on business at George Street, Richmond, who committed suicide on Friday morning. The evidence showed that the deceased, who was suffering from a cancerous tumour in the neck, which had been pronounced incurable, shot himself dead in bed with a revolver. The jury returned a verdict "That the deceased shot himself while in a temporary state of insanity, caused by the painful nature of his illness," and added that they sympathised with the family in their bereavement.

A report comes from South America of a wonderful find of gold ornaments, coins and precious stones, in an old monastery which was being demolished. Over 70,000,000 dols. worth up to the present time have been discovered, but how many noughts have to come off this we should hardly like to say. The treasures are supposed to have been secreted by the Jesuits previous to their expulsion from Brazil. Half of the treasure goes to the finder and half to the Government. The excavations are not yet finished, and it is thought that still more treasures may be found in the secret vaults which are being opened under the old monastery.

The Markets.

SILVER.

Silver has maintained its firmness with a slight tendency to decline on the whole, so that after numerous small fluctuations it now stands at 45 3-16, nor is the larger figure altered in advance till Feb.

COPPER.

Copper was much easier at the commencement of the month, being quoted at £51 10s. Within a few days an advance set in carrying it up to £53 2s. 6d. G. M. B., after which it declined till it reached its present price, £52 10s. 0d.

SPELTER.

The price of spelter has been steady, and practically remains unaltered at about £23. 10s.

LEAD.

Lead has been dull and easy all the month, standing now at £12 2s. 6d.

ZINC.

Zinc has changed hands at £26.

QUICKSILVER.

Quicksilver has been a little easier so that Rothschild has had to drop 5/ to £7 10s. 0d.

IVORY.

There was a good demand at the quarterly sales although the prices were somewhat irregular, but on the whole they were about equal to the last.

MOTHER-O'-PEARL SHELLS.

The last periodical auctions held in London presented the larger supply of 2,957 cases, 562 casks, 969 bags (not including 1,267 packages Shark's Bay and Linga) against 2,510 cases, 235 casks, 480 bags at the June sales, and 3,408 cases, 138 casks, 171 bags at the August auctions last year. With an active demand for most descriptions the sales went off with good spirit, and nearly the whole was sold. The bulk again consisted of Australian, which met a continually increasing demand as the sales progressed, and the whole sold with competition at a general advance in value—Sydney at a rise of 5s. to 7s. 6d. for bold sizes, 15s. to 17s. 6d. for thin medium, 12s. 6d. to 15s. for chicken, and 7s. 6d. for pickings. West Australian showing an advance of 5s. to 10s. for bold, 2s. 6d. to 5s. for medium, about 10s. for chicken, and 7s. 6d. to 10s. for pickings. Manila sold steadily for bold, chicken being 7s. 6d. to 10s., and pickings 5s. dearer. Bombay sold irregularly, bold being 5s. dearer, medium and small without decided change; thin, small, and oyster 5s. lower. Larger supplies of Egyptian went off flatly, and prices were mostly 2s. 6d. to 5s. lower. A good supply of black-edged was offered, but Tahiti sold readily at full rates to some advance, whilst Banda met only lower offers, and were chiefly bought in. 984 cases, 9 boxes, 29 bags Sydney and Queensland all sold: Bold and medium shells part yellow-edged and partly wormy backs, £8 10s. to £9; good to fine white, £9 2s. 6d. to £9 17s. 6d.; thin medium selected, part yellow to fine, £8 17s. 6d. to £9 17s. 6d.; one lot £8 12s. 6d.; chicken, £9 to £9 17s. 6d.; bold defective pickings, 87s. 6d. to 107s. 6d.; dead, 42s. to 90s.; broken pieces, £6 5s. to £7 2s. 6d. 907 cases 80 hogsheads 25 boxes 41 bags West Australian all sold, with the exception of 50 cases in second hands: Bold and medium shells, bold and thick bold, more or less wormy, £6 7s. 6d. to £7 2s. 6d.; fair to good, partly Fremantle; character, £7 5s. to £7 12s. 6d.; thin medium selected, fair to good, £8 2s. 6d. to £9 5s.; chicken, £8 15s. to £9 17s. 6d.; bold defective pickings, 77s. 6d. to 105s.; dead 21s. to 72s. 6d.; broken pieces £6 5s. to £7 5s. 559 cases 107 casks 131 baskets, &c., black edged went off as follows:—Of 107 casks 426 cases 21 bags Tahiti kinds 100 casks 250 cases 21 bags sold: fair to good bold, £5 12s. 6s. to £6 10s.; fine, £7 5s.; medium, £5 10s. to £6 12s. 6d.; fine,

£7 7s. 6d.; small, 90s. to 107s. 6d.; blistered, 50s. to 60s.; broken, 80s. to 85s. Auckland character, &c., bold, 85s. to 95s.; medium, 80s. to 92s. 6d.; small, 72s. 6d. to 90s.; blistered, 42s. to 47s. 6d.; broken, 60s. to 65s. 24 cases blistered Auckland sold at 19s. 18 cases 3 bags Fiji chiefly sold; bold medium and small, 55s. to 60s.; blistered, 13s. to 15s. 9 baskets small Macassar sold at 55s. Of 102 cases 98 baskets Banda only 30 cases good sorts sold at 65s. Of 17 cases 50 casks 2,149 bags Shark's Bay 280 packages sold; good clean stout, 40s. to 47s.; ordinary to fair small, 23s. to 30s.; inferior thin small, 17s. to 19s.; stale pickings, 5s. and 13s. per cwt.

TORTOISESHELL.

The supply at the auctions on August 12 was very moderate, though some quantity of old lots was offered. There was a brisk demand, and prices of West India, Honduras, &c., show a general advance of 1s. to 2s. per lb. for shell and hoof, and yellowbelly is decidedly firmer at improved prices. Some fine pale shell realised extravagant rates. Zanzibar and Bombay were about 1s. dearer. Singapore and Macassar were firm. Sydney was rather higher, and 803 lbs. shell were offered, and 598 sold dearer: small to bold, good mottle, part stout, 20s. to 23s.; pickings, defective fair to good heavy, 14s. 6d. to 16s. 6d.; ordinary to good Brisbane pickings, 11s. to 12s. 6d. Hoof.—159 lbs. offered and 98 sold: dark scabby and burnt, 11s. to 13s. 6d.; Brisbane, dark thin, 4s. Yellowbelly.—166 lbs. offered and sold, thin dark red, 2s. 9d. per lb.

Mrs. Ayer, a rich American widow, is now staying at the Savoy Hotel, and learning London society under the tutelage of Mrs. Ronalds. Her wonderful triple row of pearls, which never leaves her neck by night or day, is said to have cost a fortune; and she is, beyond doubt, one of the wealthiest women in America. Her great wealth comes to her from her husband, who died nearly twenty years ago. The base of his fortune was made through the manufacture of patent medicines, but the money made through such sources was most successfully expended in real estate all over the United States; and from that source now comes the bulk of the income. During his life Mr. Ayer was a most ardent collector of unset jewels, all of which he left to his widow. Her collection of pearls is one of the finest in America, and has been gradually and most carefully made. Mrs. Ayer has one pair of pearl earrings which cost £8,000, but it was some years before the second pearl was found. Besides these sets of pearls there are others of rubies, sapphires, and diamonds fit for the Royal jewel coffers.

The old standard clock belonging to Messrs. Barraud and Lunds, of Cornhill, will be placed in the doorway of the new premises, No. 26, Cornhill. This reliable friend of the public was the first standard clock in London. So long as 130 years ago it was doing duty at Barraud's, Wine Office Court. At No. 41 the constant stream of people who came to consult its truthful face was estimated at one thousand a day, and the continual stopping and turning of so many feet made frequent renewals of the particular piece of pavement needful.

It is announced that a Freiburg watchmaker is patenting two important inventions. One is an automatic electrical apparatus for tramways which will record the number of passengers, and the other an electric switch arrangement, by means of which a train will signal itself and even take the right points of its own accord.

The Lick Observatory, we are pleased to say, escaped the destruction from forest fire with which it was threatened, and is still pursuing its good work. A telegram from the observatory states that Encke's periodic comet was observed on its return on August 1·9958, G. M. T., in the position R. A. 3h. 55m. 20·6s., Decl. 29deg. 59′ N.

Our Unwrought Materials.

Discovery of Native Iron.

AT a recent meeting of the French Academy of Sciences, MM. Daubrée and Meunier gave the results of examinations of samples of native iron found in gold washings near Berezowsk, Persia, weighing respectively 11·5 grams. and 72 grams. It was readily attacked by acid, but did not show the Widmanstätten figures (as is the case when acid is applied to a clean face of a meteorite), which, together with the fact that nickel is absent, lead the authors to conclude that the iron is truly native. Although the metal is very magnetic, it shows no polarity. It has a density of 7·59, and contains about one per cent. of platinum.

Chickens as Diamond Diggers.

We have frequently heard of instances where chickens have been bought in large quantities and turned out to pick up their own living, and after a time killed for the sake of the gold which accumulated in their crops. Lately a two grain diamond was found in the crop of a chicken purchased at a butcher's on Long Island. It would be interesting to know if it was a cut stone, or a rough one; if the latter, then the farm ought to be found out upon which the chicken fed. The discovery of the South African diamonds had its origin in a phase in domestic life even more humble than this.

Aluminum Steel.

Important communications on the above subject have been made to the American Institute of Mining Engineers by Professors Langley and Arnold, which show that very small quantities of aluminum render cast steel perfectly sound. Small pieces of aluminum are thrown on to the ladle during the tapping, which melts almost instantaneously, and diffuses through the whole of the steel. From a half to one pound of aluminum is sufficient for Bessemer steel. When the steel contains more than 5 per cent. of carbon the aluminum should be used cautiously in amounts of from a quarter to a half pound to the ton. They detailed a number of experiments which point to the action being a chemical one; and that the action of aluminum is about twenty times as powerful as that of silicon, the aluminum being shown to reduce carbonic oxide at a temperature below that of melting steel, to which gas in an occluded form blow-holes are mainly due. In one of these researches they blew forty gallons of pure carbonic oxide through a crucible of molten aluminum steel, with the result that the carbon in the steel was increased by 35 per cent. owing to the reduction of the gas. They further maintain that the manganese can be dispensed with, and considerable time and fuel saved.

Tempering by Electricity.

An exhibition has been made at Boston, U.S., of a process invented by Mr. George Burnton, by means of which the forging and tempering of obdurate metals is accomplished with the aid of electricity. The inventor succeeded in melting a bar of steel 1in. in diameter and 12in. long in forty-five seconds, without raising the temperature of the room in which the experiment was made. He afterwards made a steel railway spike, cutting the bar the required length by passing the pieces through an electrical machine, heating it at one end, after which the bar was passed to a die, which stamped its head upon the heated end, the compression being done without beating. An auger screw was then made out of a flat iron bar, which, being fastened to the machine at both ends, was heated almost instantaneously, and twisted into the required spiral by an automatic turn of the machine. The inventor has a special machine for making the spherical ball bearings used in the manufacture of bicycles.

New Metal and Alloys.

A new metal is said to have been discovered, to which the name gnomium has been given. Beyond the merest announcement, there is nothing yet published of its nature, qualities, or value. It has been found associated with cobalt and nickel, both of which metals have been looked upon rather suspiciously by many chemists for a long time. Some accounts state that the new metal has been discovered in both nickel and cobalt; if so, it would point to these last two not being elements, an opinion which has been expressed before.

There are several new alloys that have been invented to take the place of gold, one especially altogether differing from anything else, but which we should require to see before we published what is claimed for it.

The solution of the anti-magnetic problem has not yet been effected. In addition to palladium—which, doubtless, is immensely superior to anything else employed—we have Hadfield's manganese steel; we have "Woltine," composed of platinum and gold; "Wolfor," composed of wolfram and gold; "Mangor," composed of manganese and gold; "Cadmine" and "Aror," in which cadmium enters largely, in the latter it is associated with gold and manganese. These together with some more complicated alloys, such as "Manium," which is composed of platinum, bismuth, copper, and manganese, go to swell up the list of alloys that are brought forward for this purpose. We still, however, think that if the difficulty is to be overcome at all, which it certainly can be, a diamagnetic should be made to compensate a paramagnetic body.

Rich Silver Deposits in Wales.

News has reached us, which, however, we should require confirming before we gave it as correct of a rich and extensive deposit of silver ore said to have been found in Cardiganshire. It is stated that the deposit has been proved to a width of 150ft., and contains on assay 27⅓oz. of silver per ton of ore. A practical silver mining engineer estimates that upon an output of only 50 tons per day a profit of £30,000 per annum can be made.

A New Substitute for Platinum.

Numerous attempts have been made to obtain a metal substitute for platinum but without any great amount of success, the popular metal Aluminum having in several cases been asserted, when alloyed according to "the discovery" of its advocate, to be equal in every respect. The latest claimant in the field is composed of iron, nickel, silicon, cobalt and gold or silver, which, while not possessing the acid resisting power of platinum, has a co-efficient of expansion the same as glass, so that for many purposes it will be of great use.

Freshwater Pearls.

Visitors to the Fisheries Exhibition will remember the glorious display of nacreous shells belonging to the unionidæ of the fresh waters of America. Every shape and size conceivable were represented, with no other apparent tie than that they all possessed the same brilliant nacreous inside to their variously ornamented shells, and were all capable under certain conditions of producing pearls. There can be no doubt that during what may be called the late pearl-hunting fever, some very fine specimens have certainly been taken. One Milwaukee firm sold to a New York dealer three specimens for 1,600dols., while some are said to have realized as much as several thousand dollars each, and hundreds brought prices varying from 30dols. to 300dols. It is only natural that the exaggerated accounts of such things as these should have attracted the attention of thousands; and the result is that nearly every river has been raked, mill-ponds drained, and along the banks of streams lie tons of the beautiful shells of these creatures that have been ruthlessly sacrificed to this passion, so that it will be very many years for these to obtain a footing in American waters again, and few pearls will of necessity be produced.

Items of Interest.

Ten Thousand Clocks Stopped.

The ten thousand clocks under pneumatic regulation in Paris were brought to an unanticipated standstill on August 5th. It appears the navvies on strike had left an excavation in such a state that the sides gave way, and disarranged the pneumatic tubes. At midnight the clocks were all set going again.

* * *

New Arc Lamp.

Many employers of the electric light will be glad to hear that Messrs. Woodhouse and Rawson have brought out a new arc lamp, the Midget, to fill a space in the enormous gap between the gigantic unwieldy arc lamp as usually known and the incandescent. This lamp is made to give 250-candle power, using five ampères at an electro-motive force of 45 volts, which is very economical compared with what has been done before. It also has this remarkable advantage over other arc lights—it is practically steady, and requires no skilled attention.

* * *

Comparative Cost of Electric Light.

An invaluable paper has recently been read before the Société des Ingénieurs Civils by M. Haubtmann on this subject; it states the differences of cost of electric lighting in various places arises from the amount of capital engaged and the systems adopted. The cost per electric "horse-hour" in various places is as follows: London 0.375 francs (three times the cost of gas), in Paris it is 0·90 francs, at St. Brieuc 0·52 francs, and at Fribourg it is only 0·1 franc, if the consumption is over 20 horse-power. Obviously with such disparity in the cost of production as this, the subject is but in its infancy; ere long electric light will be cheaper than gas everywhere.

* * *

Magnetised Watches.

Whatever may be the relative numerical strength of homœopaths and allopaths in the science of medicine, it is certain the homœopaths have in theory the best of it with magnetised watches, for here we have a remarkable exemplification of "like cures like," and as such it has been strongly advocated in several electrical quarters to apply the cure, wherever the ill exists. If your watch has become magnetised by being in close proximity to a dynamo, say they, probably the back case faced this modern fire belcher; therefore, suspend your watch with the face from you a short distance from the machine, hold it in that position for a second or two, and then move it slowly away, turning it round by means of the chain until you have reached a safe distance, when the watch will be found to be nearly right. The reason of this is, that at first the works were magnetised from, say, left to right, so that on bringing it with the other face to the dynamo it is magnetised in the opposite direction, which about neutralises the former charge, and the few turns given to the watch as it is moved away reduce the magnetism to a minimum.

* * *

New Watchman's Clock.

One of the simplest and best of this class of things that have been brought out is of American origin. An ordinary small American timepiece has an extended barrel, or drum, fixed to the winding square, around which is wound a strip of paper marked off into hours, halves, and quarters, which is made to pass over a rest; a small spring punch works in a guide through the slip upon pressure of the watchman on duty, marking the exact time he passes. The piercing stud can easily be attached to the latch of the door, or similar fastening. The strips can be taken care of for future reference if required.

A Human Chronometer.

The subjoined is going the round of the papers. If true, it is certainly remarkable both physiologically and psychologically, the most so of anything of the kind we ever heard. We once knew a man who offered to wager that if aroused from sleep at any hour in the night he would tell the time within five minutes:—

J. D. Chevalley, a native of Switzerland, aged sixty-six, has arrived at an astonishing degree of perfection in reckoning time by an internal movement. In his youth he was accustomed to pay great attention to the ringing of bells and vibrations of pendulums, and by degrees he acquired the power of initiating in himself a succession of intervals exactly equal to those which the vibrations of sounds produced.

Being on board a steamboat on the Lake of Geneva, July 14, 1882, he undertook to indicate to the crowd about him the lapse of a quarter of an hour, or as many minutes or seconds as anyone chose to name, and this during a most diversified conversation with those standing by; and further to indicate, by the voice, the moment when the hand passed over the quarter minutes or half minutes. This he did without mistake, notwithstanding the exertions of those about him to distract his attention, and clapped his hand at the conclusion of the time fixed. His own account of his curious faculty is thus given:—"I have acquired by imitation, labor, and patience, a movement which neither thought nor labor, nor anything else can stop. It is similar to that of a pendulum, which, at each motion of going and returning, gives me the space of three seconds, so that twenty of them make a minute, and these I add to one another continually."

* * *

The effects of Western Civilization.

There is little in the way of swindling that the Westerns can teach the Easterns, but it appears from the following that Pinter's frauds have inspired the Indian. A Hyderabad paper says:—

"A deliberate swindle was committed in Secunderabad by a Fakir who pretended to be an alchemist. This Fakir, going to a Mahommedan in the Regimental Bazaar, asked for alms. On the man offering him two dubs, the Fakir receiving them told him that he would teach him the science of alchemy, as he appeared to be a deserving man, which he knew by looking at his face. The poor man, believing all that was said, took the Fakir into his house and offered him food. The Fakir then told him that he (the Mahommedan) should get all the necessary things ready by the next day, as he (the Fakir) was forbidden to stay in one country for more than three days. When questioned as to what things should be brought, he told him that, as he should turn the copper into ash, which if thrown in small quantity on a well-heated copper would be converted into gold, an equal quantity of copper and gold was first required for the production of that ash. The man, believing all that was told, took a few jewels from his wife to the value of about fifty rupees, and, melting them into a mass, got them ready by the next day. On the next day the Fakir, while covering both copper and gold with cloth to be burned, stealthily removed the gold and placed a stone in its place. After about ten minutes, the Fakir, leaving behind all his clothes and telling the man that he would return with the juice of a certain plant to be poured on the metals and ordering the man to carefully watch the fire, bolted away with the gold. The man, after waiting for about two hours, discovered the fraud."

* * *

A Tower for Preston Park.

A magnificent tower is to be erected in Preston Park, Brighton, of red brick and buff terracotta, 65ft. high, with 18ft. 6in. base, to carry a tower clock. The whole of which will cost probably £1,500 is the munificent gift of Mr. Edward White, of Lincoln Lodge, London Road, Brighton.

Illustrated Inventions Record.

APPLICATIONS FOR PATENTS.

Expressly compiled and contributed for this Journal by Messrs. W. P. Thompson and Co., F.C.S., MM.I.M.E., Patent Agents, 6, Bank Street, Manchester; 6, Lord Street, Liverpool; and 323, High Holborn, London, W.C.

11,427.—J. Walker and J. Hampshire, Dewsbury, "Solitaires and studs for shirts, collars, &c." 6th July, 1891.

11,954.—C. Kleyer and E. Rock, London, "Fasteners for bracelets, &c." 14th July, 1891.

12,048.—G. A. Cartwright and F. D. Storey, London. "Fastening for brooches, &c." 15th July, 1891.

12,446.—C. Loom, Birmingham, "Fastener for sleeve links, &c." 22nd July, 1891.

10,603.—J. Thornelow, London, "Solitaires for cuffs.'

10,605.—F. W. Jones, London, "Sleeve links."

10,859.—M. A. Tighe, London, "Sleeve links."

11,221.—T. Elcoate, London, "Brooches." 1st July, 1891.

11,409.—J. B. Scoltock, London, "Watch keys, &c." 4th July, 1891.

11,390.—G. V. Pinfold and A. G. Pinfold, London, "Wedding rings." 4th July, 1891.

11,718.—W. S. Randall, London, "Sleeve links."

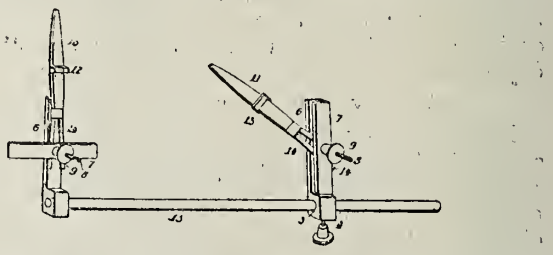
11,903.—S. Hill, Birmingham, "Buttons, solitaires, &c." 14th July, 1891.

12,710.—W. Tremlett, London, "Clasps for bracelets, &c." 27th July, 1891.

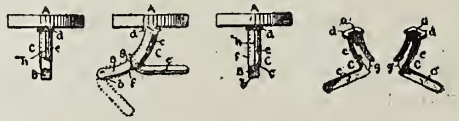
13,057,—J. H. Fox, London, "Brooches." 1st August, 1891.

Jeweler's Clamp.—Abram L. Scudder, Deposit, N. Y.

In a jeweler's clamp, the combination, with the base bar 3, made in a single piece, of the clamp 1, rigidly secured on one end thereof, and of the clamp 2, adapted to be slid on the bar and be secured at any desired position along the length thereof by means of a binding screw, as described, these clamps being each formed of a fixed jaw and a detachable jaw held together by a nut and threaded arm in such a manner as to permit of the adjustment of the jaws to and from each other and to permit of the turning of the detachable jaw.



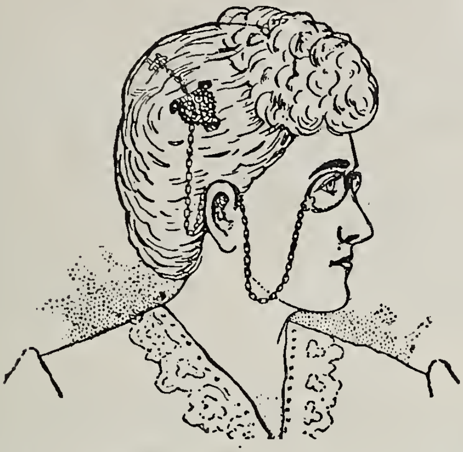
Button.—Frank E. Williams, New York, N. Y., assignor of one-half to Horton, Angell and Co., Attleboro, Mass.



The combination, with the button or stud head, of the curved arm B, secured thereto and provided with a shoulder, *f*, and the bent arm C, mounted to slide on the arm B and having a bifurcated portion *c*, which surrounds said arm, that portion of the arm B between its upper end and the shoulder *f* being thinner than the arm below said point, whereby a locking shoulder is formed, and the said locking shoulder being located as described, so that the lower end of the portion *c* of the arm C will engage said shoulder when the arm C is in a closed position and lock it there.

Things New and Noteworthy.

New "Eye Glass". Holder

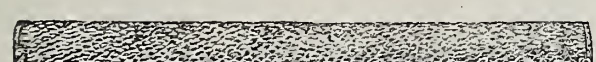


A new and effective idea is to have the eye-glass suspended from a hair-pin, which can be either gold or gems. It is said to be most comfortable in wearing, and is very effective in appearance; our illustration shows one attached to a diamond mounted hair-pin. It will be observed that the pin goes through the hair and passes through a ring at the end of the chain, so that it is impossible for it to pull out.

Silver Goods Increasing.

The number of articles made in silver is still on the increase; Chasing, Repoussée, Old Dutch, and Queen Anne, are each resorted to, to add further variation to the numerous articles that are now being made. An article that is selling well with those who make it, is a silver shaving pot and brush; the same may be said of silver-mounted razor strops. As ladies so often remark, there are thousands of things to give a lady, but so few to give a gentleman, so that any useful article for a gentleman is sure to meet with a good sale. A silver watch box, satin-lined, both for gents and ladies, is also selling very well. Very elaborate, heavily silver-mounted purses are also finding a good sale, and some very handsome things are being produced in consequence.

New Place for Watches.



The above illustration gives a specimen of the position in which watches are now to be found. Thus placed they are employed for the convenience of ladies doing their shopping; the mounts of the purse are sometimes gold, and sometimes silver. The idea lends itself to an infinity of variation.

Gazette.

Bankruptcy Record.

Butler, Edward, Alfred Street, Warstone Lane, Birmingham, Warwick, and Yardley Road, Acock's Green, and Worcester, Electro-plater.—Deed of Assignment for the benefit of creditors. Trustee: Charles Wm. Cotterell, 41, Temple Row, Birmingham, with a committee of inspection. Dated 5th August, 1891. Filed 8th August, 1891. Unsecured liabilities, £1,746 17s. 11d.; estimated net assets, £521; creditors fully secured, £29. The following are scheduled as creditors:—

		£	s.	d.
Hall, J.,	Birmingham	11	16	8
Schnidler and Company	London	47	6	6
Anthony, J. W.,	Birmingham	16	2	0
Clemmens, John	,,	13	9	11
Lingard and Hackwood	,,	19	13	4
Flint, H., and Son	,,	36	8	7
Birmingham and Midland Bank	,,	233	0	0
Randel, John	,,	1,200	0	0
Bolton and Mills	Stourbridge	11	10	7
King	Birmingham	15	4	5

Close, John Robert, 67, Marton Road, Middlesborough, late 1 Bishopton Lane, Stockton-on-Tees, late Watchmaker and Jeweler. The following creditors are scheduled in this case:—

		£	s.	d.
Bryan, Jesse	Stockton	12	0	0
Close, Wm.	South Stockton	70	0	0
Cohen, J., and Sons	Birmingham	35	0	0
Minto, Wm.	Stockton	10	1	0
Nud, J. A.	Birmingham	10	0	0
Richards, John	Manchester	12	8	2

Hettish, Gordon, 14, Magdalene Street, Exeter, Devonshire, Watchmaker and Jeweler.—This debtor has filed a statement of affairs showing unsecured liabilities £158 0s. 1d., and net assets estimated at £86 12s. 5d., or a deficiency of £71 7s. 8d. The following are scheduled as creditors:—

		£	s.	d.
Barry, S. H.	Donegal	10	4	6
Bach	Birmingham	10	8	3
Conitz	Plymouth	13	0	0
Cordwent	Teignmouth	10	7	0
Dight, L.	Birmingham	10	7	11
Holmes	,,	13	7	11
Wolfe, W.	London	14	8	4
Wehrle	Baden	12	13	5

Fully Secured Creditor.

Peters	Exeter	14	18	0

Partly Secured Creditor.

Churchill, S.	Teignmouth	19	2	0
Preferential Creditors		12	16	6

Ninnes, James Henry, 20, Mount Pleasant, Tunbridge Wells, Watchmaker and Jeweler.—Deed of Assignment for benefit of creditors. Trustee: George G. Poppleton, 26, Corporation Street, Birmingham (C.A). Dated 6th August, 1891. Filed 12th August, 1891. Unsecured liabilities, £1,955 15s. 7d.; estimated net assets, £1,750; creditors fully secured, £112. The following are scheduled as creditors:—

		£	s.	d.
Willis and Company	Birmingham	241	18	4
Adkins, H., and Son	,,	225	0	0
Griffith, H., and Son	,,	98	6	5
Kirwan and Company	London	90	0	0
Reynolds, J. W.	Birmingham	31	0	0
Wilkinson, S., and Son	,,	39	3	11
Weekes, R. W.	Tunbridge Wells	35	0	0
Bouldsbridge, E.	London	22	9	0
Bank, J. M.	Birmingham	17	7	8
Walker Bros.	,,	10	0	0
Mark Willis and Son	Sheffield	46	5	9

Grimshaw and Baxter	London	33	2	9
Old Hall Porcelain Works, Limited	Hanley	15	15	0
Smith, John, and Sons	London	48	6	7
Lester and Allen	Tunbridge Wells	15	19	3
Major, Manger, and Company	London	10	10	6
Minnes, A.	Liverpool	118	15	0
Tanner ...	Groombridge	10	0	0
King and Sons...	London	16	4	9
Hawitz, D.	,,	10	12	3
Boyton, Charles, and Son	,,	10	16	5
Hugrenin, Hall, and Company	,,	13	4	0
Harburg, Henry, and Company	,,	15	13	0
Richard and Company	,,	26	14	0
Birmingham and Midland Bank	Birmingham	25	1	6
London and County Banking Company ...	Tunbridge Wells	37	0	0
Ninnes, Benj. F.	Hythe	432	3	3
Jackson, Philip	Tunbridge Wells	123	0	0
Walford, Miss ...	,, ,,	35	0	0
Tunbridge Wells Gas Company	...	14	5	0
Corporation of Tunbridge Wells	...	11	14	0
Edwardes, Matt.	Tunbridge Wells	17	16	9

Deeds of Arrangement.

Lindow, Joseph, 72, Highbury New Park, Canonbury, and 105, Hatton Garden, London, E.C., Diamond Dealer.

List of Creditors:

		£	s.	d.
Lindenbaum and Weil	London	385	15	3
Weigel, B.	,,	74	15	0
Messer, S.	,,	258	12	0
Wright and Hodgkiss...	Birmingham	511	19	6
Cox Brothers ...	,,	243	11	0
Moppes, D. L. Von, and Fils	Paris	529	2	0
Schiff, Madame V.	,,	262	14	0

Bonsall, John, Pier Terrace, Lowestoft, Jeweler.

		£	s.	d.
Troup, J., and Sons ...	London	372	11	5
Pecover, J.P. ...	,,	47	1	5
Thwaites and Reid	,,	19	7	2
Seigele and Bennett ...	,,	16	19	8
Greenwood and Sons ...	,,	53	16	6
Haswell and Sons	,,	10	18	0
Sharland	,,	65	14	7
Hayden, R.D. ...	Birmingham	55	12	0
Unite, G., and Sons ...	,,	10	0	7
Constantine and Floyd	,,	41	0	7
Fuller, S.K.	Lowestoft	135	0	0
Fraser, J.E.	,,	15	4	11
Deakin, J., and Sons	Sheffield	44	10	8

Dyer, Richard, 38, Cavendish Street, Manchester, Jeweler, Watch and Clockmaker.

		£	s.	d.
Aronsberg Bros.	Birmingham	60	5	10
Lyon, S.	,,	266	14	2
Dyer, S.	Bridlington	434	6	10
Brash, Isaac	Leeds	18	4	0
Patterson, J.	Manchester	18	3	11
Rosenthall and Son	,,	27	5	0
Rains, Dr.	,,	13	10	0
Bankers' Claims	...	12	3	0

Norcross, Frank, 58, Ashton New Road, Manchester, Watchmaker and Jeweler.

		£	s.	d.
Loveridge Bros.	Birmingham	55	12	2
Haigh, Abraham	Manchester	93	10	0
Patterson, James	,,	40	0	7
Meyer, Samuel...	,,	26	7	11

Moosmann, Paul, 245, Long Lane, Bermondsey, London, S.E., Watchmaker and Jeweler.

		£	s.	d.
Abraham, S., and Sons	London	32	5	10
Blanckensee and Sons, Limited	,,	19	11	0
Baunn, —	,,	15	0	0
Conway and Company	,,	36	9	0
Collins, Maurice	,,	12	10	0
Davenport, A. J., and Company	,,	148	2	0
Gollancy, A. ...	,,	29	13	10
Johnson, G. W.	,,	15	9	3
Kirschbann, —	,,	50	16	10
Ling, E.	,,	143	19	2
Light, E.	,,	26	10	9
Little and Company ...	,,	12	0	0
Mojon, Manger, and Company	,,	17	18	0
Mayer, A., and Son ...	,,	27	12	3
Schultis, Schwar, and Company	,,	27	9	0
Unna, H. A. ...	,,	72	4	7
Weill and Company ...	,,	28	3	0
Lehsmene, — ...	Badone	28	0	0
Lewis Brothers	Birmingham	90	0	10

Hant, Robert, 26, Saltaire Road, Shipley, Jeweler.

		£	s.	d.
Cohen, J., and Son ...	Birmingham	104	13	4
Crosbee, A. W., and Company	,,	148	11	1
Holmes, William J. ...	,,	68	6	5
Wallis, G. and F. E. ...	,,	12	4	0
Cuttle, Holt, and Company ...	Leeds	15	2	3
Makin, George...	Manchester	308	6	5
Rutherford, J. J.	Shipley	21	10	0

Dividends.

Gardner, William Henry Buckby, 5, Russell Terrace, Old Allesley Road, Coventry, Watch Manufacturer. First and final dividend of 7s. 11d. at Official Receiver's, Coventry, July 31st.

Bartle, George, Scunthorpe, Watchmaker. First and final dividend of 2s. 6d. at Official Receiver's, Hull, August 8th.

Bills of Sale.

Webling, Robert James, 6, Wellington Terrace, Bayswater Road, W., Jeweler and Silversmith. In favour of Ethel Webling. Dated July 28th, and filed August 3rd. £87 5s. of plant, fixtures, &c.

Sherwin, Julius Henry (and wife), 3, Bank Buildings, Crouch Hill, Islington, N., Watchmaker and Jeweler. In favour of Charles G. Lodge. Dated July 27th, and filed July 27th. £85.

Winding up of Public Companies.

The Johannesburg Land and Gold Trust Company, Limited, 57, Moorgate Street, London, E.C.

		£	s.	d.
Abrahams, Michael, and Sons	London	35	0	0
Cook, J. W. ...	,,	15	0	0
Dixon, Charles...	,,	38	0	0
Hosking, J. H....	,,	25	7	2

Preferential Creditor.

Hosking, J. H....	London	41	13	4

The Silver Wolverine, Limited, 145, Cannon Street, London, E.C.

		£	s.	d.
Kemp, Ford, and Company ...	London	10	10	0
Pearse, W. E. ...	,,	100	9	0
Winter, Major...	Bishop's Lydeard	41	13	4
Gilbert, R.	Marazion	206	0	0
Gilbert, J.	Port Arthur	44	2	3
Gilles and Lampshere	,,	10	14	9
Hamilton Powder Company	,,	24	14	11
Hasking, W. J.	,,	42	8	11
Hodson, W. ...	,,	40	2	3
Lalonde Company	,,	75	8	10
McLean, C. J....	,,	31	9	11
Wells and Emmerson	,,	12	13	7
Woodside Bros.	,,	12	19	10

Meeting of Creditors.

Lazarus Teplitzky and Jacob Shapera, Jewelers, Glasgow, were examined in bankruptcy, in the County Buildings, before Sheriff Guthrie. There were also present Mr. John Miller, C.A., trustee; Mr. Daniel Hill, of Messrs. D. and J. Hill, writers, agent in the sequestration; and Mr. Wm. Kidd, writer, for the bankrupts. Mr. Teplitzky produced a state of affairs, showing liabilities £1,454 9s. 9d. and assets £80 6s. 9d. He said he commenced business four years ago with a capital of £20. He assumed Mr. Shapera as a partner eighteen months ago, and he had a capital of £550, represented by book debts and stock. Owing to the furnacemen's strike the miners had to come out also, and the firm could not get payment from either. That was the only reason he had to give for the deficiency. The examination closed.

An adjourned private meeting of the creditors of John Edward Wilmot, trading as E. D. Wilmot and Son, Jewelers' Factors, and as J. E. Wilmot, Goldsmith and Silversmith, of Hylton Street, Birmingham, and The Shrubberies, Alvechurch, was held on August 20, at the Grand Hotel, Colmore Row. Mr. Walter Best (president of the Birmingham Jewelers' Association) presided, and there was a large attendance of creditors. Mr. I. Bradley represented the debtor. An amended statement of affairs was presented by the committee of inspection appointed at last meeting, which showed the liabilities to be £17,605 14s. 1d., and the assets £10,706 4s. 1d., leaving a deficiency of £6,899 10s. A composition of 10s. in the pound, to be paid by instalments, was suggested, but as the debtor was not able to offer full security for the whole of the instalments, it was resolved to execute a deed of inspectorship to carry on the business, the committee in the matter to consist of the same gentlemen as before with the exception of Mr. Green, who declined to act; Mr. H. Hyde was chosen in his place. The committee now consists of Messrs. W. Best, G. H. Johnstone, J. T. Pepper, and H. Hyde.

Re Samuel Bradley.—In the Birmingham Court of Bankruptcy, August 20th, Mr. Registrar Parry made a receiving order in the matter of Samuel Bradley (trading as Samuel Bradley and Co.), residing at 23, Park Avenue, Handsworth, and carrying on business at 27, Frederick Street, Birmingham. Mr. Arthur G. Colbeck, of 128, Colmore Row, is solicitor in the proceedings.

LETTERS TO THE EDITOR.

To the Editor of The Watchmaker, Jeweller and Silversmith.

Sir,—The Horological Institute, in publishing the list of successful candidates at the last "exam.," points out its own students, among which is the prize man in the Honors Grade.

This same student has obtained the silver medal in the Ordinary Grade, and also already a first-class in the honors in connection with the Polytechnic.

Under these conditions his course is somewhat unusual, and is likely to convey the impression that it is due to a belief in superior instruction.

To dispel doubt on this point I "interviewed" Mr. Ludwig by letter, and now would beg of you to permit me to quote that part of his letter which directly replies to this.

". . . Not that I anticipated that the knowledge or information to be obtained would be of a superior order. On the contrary, I have strongly recommended several of my workshop acquaintances to become members of your classes, a recommendation which I can emphasise from personal experience. . . ."—I am, Sir, your obedient servant,
I. Herrmann.

THE REVIVAL OF HERALDRY.

To the Editor of The Watchmaker, Jeweller and Silversmith.

Sir,—The communication from your correspondent, Mr. James W. Jenkins, on the above subject, in the last monthly number of your valued publication is both interesting and opportune, especially at a time when so much is said and written on the extension of technical instruction in all branches and departments of our various national trades, manufactures, and industries, and I have every confidence in predicting that Mr. Jenkins's seasonable contribution to the controversy will tend very considerably to encourage the already reviving art, around which cluster so many bright and ennobling associations of history, chivalry, the pomp of martial prowess, and the gallant deeds of the mighty dead,

Whose swords have long since turned to rust.
But their souls are with the saints, we trust.

There are already indications that in this, as in other walks of literary, artistic, and scientific enterprise, the last decade of the fast-waning 19th century will witness a *Renaissance* that in its results on *belles-lettres*, as well as on commerce itself, will be as beneficial as its precursor of the 16th century, which heralded to a benighted Europe an era of enlightenment, mental emancipation, and universal progress, the fruits of which the civilised world of to-day so abundantly enjoy. It is, indeed, a matter of surprise that in this age of general culture Heraldry has been so much neglected, and this wonder is increased when we bear in mind that the study of Heraldry, in all its diversified quaint meanings and allusions, its mottoes and crests, its fanciful and very often *outré* and far-fetched legends, curious, but suggestive symbols, and in a word its peculiar terminology—strange and mystic to the uninitiated—cannot be pursued for any lengthened period without opening up new, enlightened, and broadened views upon many important topics, and casting light upon dark, intricate, and obscure passages and places in the manners, habits, customs, and ways of remote epochs and of generations long since mouldered into their kindred dust. We are told by Sir Bernard Burke, the Ulster King at Arms, and admittedly the first and most distinguished authority in a field of knowledge that for close upon half a century he has made peculiarly his own, that the mere process of ascertaining the significance and symbolism of titles, devices, armorial bearings, orders, and offices of precedence, emblems, ceremonials, etc., is *per se* a healthy and invigorating intellectual exercise, leading the mind back through many of the most momentous, romantic, and stirring epochs in the annals of nations. He reminds us how Sir Walter Scott, an expert in everything appertaining to the usages and customs of the past, in that most delightful and touching of his poems, "The Lay of the Last Minstrel," depicts the untutored and unlettered William of Deloraine as versed in armorial lore, and able to decipher the crane on Baron Cranstoun's crest. The moss-trooping Knight of Branksome's Hawthorn Green, who

Be it scroll, or be it book,
Into it he ne'er did look;
For letter or line knew he never a one,

could read the sculptured scrolls on Melrose Abbey, and the meaning of the arms, banners, and knightly and ancient Scottish escutcheons, with which the walls and scored shrines of the venerable fane were emblazoned. It was, as every reader of Cervantes, the immortal author of the knight of the rueful countenance, the chivalrous and painfully punctilious Don Quixote, and his faithful squire Sancho Panza, will know, insisted upon at far-famed Salamanca—Spain's chief seat of learning, and the foremost university of the mediæval period of European history—that Heraldry should form an important portion of the curriculum, and, indeed, for that matter, of the prescribed studies of the *Alma Matres* of other countries of Christendom in what has not been inaptly described as "the dark ages." In many of the Continental lyceums, more particularly in the schools and academies conducted by the Dominican, and like religious orders in France, Bavaria, and other Catholic countries, it is still enrolled amongst the regular class subjects of study, being considered by not a few educational experts to constitute an elegant and interesting branch of investigation, and through its close connection with history an education in itself. The indifference, or it would perhaps be more correct to say, the utter neglect into which such an important and useful study has been allowed to lapse of late years in England may be ascribed to several causes, not the least potent among which may be reckoned the demand for cheap, and, in too many instances, badly-executed work, its inferiority being a natural consequence of its low price and the necessarily lowered wage paid to the artificer. There can scarcely be a second opinion amongst those who have followed the current of modern educational efforts as affecting and controlling various departments of handicraft, that sufficient stress has not been given to the intimate relations subsisting between ordinary schooling and subsequent skill in manual labor; or, as a well-known and sympathetic writer on the subject, Mr. John Ruskin, admirably puts it: "the school should be the workshop, and *vice versâ*, for both are means to one great end—the making of an accomplished and efficient hand-worker, no matter what the art, labor, or craft, to which the boy may hereafter devote his energies." I fear it is sadly too true that comparatively scant attention has been paid by many of the workers in the trades, of which your influential paper is at once the organ, exponent, and fearless champion, to the culture of the delightful and entertaining study of which this letter treats. The engraver has overlooked the great impetus to his success derivable from a more intimate acquaintance with the Heraldic Art. Apart, however, from this consideration of the question, taken purely from the working man's view and standpoint, it must not be forgotten that the fees demanded by the officials at the Heralds' College from the Earl Marshal of England, his grace the Duke of Norfolk, down to the lowest subordinate in the institution, are somewhat prohibitory. The charges made for the granting of fresh patents for arms and their maintenance are so high that, like the late Dr. Magee when he was promoted to the archiepiscopal dignity of the see of York, most aspirants for Heraldic honors will be inclined to repeat his Grace's episcopal formula (a little varied)—"*No lo armigeri.*" The consequence is that it is only the exceptionally opulent classes who are and will be ambitious of securing a place amongst the *patres nobilitati* of the land, and of patronising the labors of the engraver whose toil, like that of his predecessor in the days of Michael Angelo, "was spent amid dragons, bears, embossed shields, and burning fields of gold and argent." How different in this respect are our brethren in the United States of America; and much as our friends Jonathan and Sam Slick may declaim about equality, "Republican institootions" and the universal brotherhood of man, they dearly love a lord, and not even the descendant of the successful railway contractor, Lord De Brassey, could be more anxious in tracing his lineage to some "Baron bold who crossed the foamy billows with Duke William of thrice-famed Normandee." An amusing instance of this craving for ancestral honors was afforded a short time ago, when the manor house and small estate of Sulgrave, in Northamptonshire, and not far from Banbury in Oxfordshire, was offered for public sale in the City of London Auction Mart in Tokenhouse Yard. Sulgrave was in the usual glowingly bombastic catalogues of the auctioneers described as the natal home of the progenitors of George Washington, the *pater patriæ*, whose name is reverenced with the same filial piety by every true-born citizen of the States as the Mohammedan pays to the Prophet of Mecca. A Yankee syndicate was formed, and for a goodly sum the College of Heralds and Sir Bernard Burke were able to furnish Washington with a decent pedigree, dating back to a Norman knight, Sir William de Sulgrave Washington, who flourished seven hundred years ago, and first owned the ancient Manor of Sulgrave. But such pride "in their forebears," as a Scotchman would say, is pardonable to the countrymen of George Washington, and ought certainly to have a healthy stimulus on the natives of the old island home in whose former glory both Yank and Britisher equally rejoice.

I entirely concur with Mr. Jenkins in his observations on the appropriateness of Heraldry to artistic decorations of gold and silver articles; but I am afraid that the number of "people" able to trace at a glance the history and pedigree attaching to noble and ancient families by means of heraldic designs is an insignificant minority. I have had painful but convincing experience of this fact on pilgrimages made to many of our most famous cathedrals, whose visitors are few indeed that can distinguish between one coat of arms and another, or take the trouble of acquiring the requisite knowledge for appreciating the art treasures with which so many of these venerable piles and gems of ecclesiastical architecture are so richly dowered by the piety and munificence of our ancestors in the long-past "ages of faith." As a case illustrative of this I may mention that a short time ago I visited Christ Church, where the verger's Ciceronian explanations and verbal descriptions of the various armorial bearings and devices on the several tombs excited but little interest from the many sightseers, whose intense admiration found voice and utterance in the monosyllabic "Ah." The origin of Heraldry has been variously ascribed to Phœnician, Assyrian, Roman, Moorish, and mediæval times; but according to Sir Bernard Burke the *fons et origo* of this "scion of the chivalrous days of yore" was intimately connected with the inroads of the soldiers of the Cross into Paynim lands. The origin of Heraldry and of the use of family arms and mottoes, which form a prominent feature in European systems of "honors," has, says another distinguished writer on archæology and kindred subjects, been ascribed, with much appearance of truth, to the necessity of leaders in battle bearing some device or mark by which their followers could constantly recognise them. These are beyond doubt of very remote origin—as remote and ancient, probably, or nearly so, as the existence of war itself, though it was not until towards the later period of the middle ages (Burke is inclined to think the days of Edward III.) that Heraldry was moulded into a science, a designation that all must agree it is deservedly entitled to. To the Crusaders, however, and to the fostering patronage of Pope Urban and subsequent occupants of the Pontifical See of Rome, Heraldry owes the prominent place it held in history and the social economy of Christian Europe.

Although threatened many times with total extinction, like the Knights Templars and other old Roman Catholic fraternities who mainly founded it, Heraldry, sharing the fate of all true art, has survived, and I trust it may be long ere it lapses into a dormant state again. For as our Shakespeare says in his "Measure for Measure"—

> It deserves, with characters of brass,
> A forted residence 'gainst the tooth of time,
> And razure of oblivion.

I am, &c.,

ARTHUR W. COOPER.

Mitchell and Cooper,
58, Great Sutton Street, Clerkenwell.

ANSWERS TO CORRESPONDENTS.

A. W. PRIDHAM.—The dichroscope is invaluable to anyone wishing to test doubtful gems, especially cut gems, where other kinds of testing is sometimes hardly possible. Of course it requires understanding to be able to use it. You probably understand that on looking through the dichroscope, owing to the double refraction of the prism, the aperture becomes double, *i.e.*, instead of one square one sees two. If, now, a red stone be placed over the aperture and turned round, if it be a spinel, both squares will remain the same color. If, however, the stone be a ruby the two squares no longer remain one color in any position, but become two colors, hence a ruby and other stones, not crystallizing in the Monometric System are said to be dichroic, whilst those which crystallize in that system, and only show one color, are said to be monochroic. The best place to get the instrument is Messrs. How and Co., 73, Farringdon Street, E.C. I should advise you to get one with the improvements for holding focussing, etc., as devised by myself. It will only cost about ten shillings more, and you are quite welcome to them; the instrument would probably cost complete (trade) 27s. 6d. I shall devote a good space to dichroscopy when the crystallographic series of articles is done, *vide* August, 1890, number.

The
Watchmaker, Jeweler
and Silversmith.

EDITED BY W. J. LEWIS ABBOTT, F.G.S.

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Rebate of the Plate Duty.

WHEN the Chancellor of the Exchequer set aside his £120,000 for drawback of duty upon the plate held by the manufacturers and dealers, it was strongly argued that this would be quite inadequate. The thoughts of the immense amount paid upon wedding rings and other articles of "gold plate," in addition to the hundreds of thousands of ounces of silver that had been increasing to the nation's stock, seemed to preclude such an idea. Accordingly, we find him saying in the House that he only proposed to set aside £120,000, and pay off as far as it would go. This £120,000 was, of course, based upon estimates which amounted to rather under that sum; but when the thing comes to be settled we find that the claims established amount in all to only £94,250, thus leaving a surplus of £25,750. However little favor one showed to the repeal of duty, when it came to be paid most people were glad to receive it, and write down their stock accordingly, and were ultimately highly satisfied; indeed, there was little reason for them to be otherwise. The people who had cause to be dissatisfied were those who held large quantities of "gold plate," principally in the form of wedding rings. Now, we have made a rough estimate of the proportion which the value of wedding rings bears to that of silver plate from the first sixty odd houses we passed, and we were surprised at the results; for it must be borne in mind that the duty on one ounce of gold practically equals that on twelve ounces of silver, and we were informed that several stocks contained between three and four hundred ounces of wedding rings, the equivalent of, say 4,000 ounces of silver. Now, although we know there were several houses who could muster up 10,000 ounces, we can count up all the houses which are likely to exceed 4,000, each of which are special silver houses. But then comes the question of the ordinary average jeweler throughout the country. Not only do we find the duty on "gold plate" in their stocks running closely up to the silver duty, but frequently it is positively more. It might be argued that jewelers disregarded the abolition of the duty, and attempted to sell out their old stock at their usual rate of profit upon cost price; but it must not be forgotten that many people "cut" wedding rings, and those who make them a speciality are the ones who have the greatest opposition from their "neighbours," so that it would be practically impossible to reduce weddings a pound an ounce without at least selling without a profit, and such cases would represent the largest stocks in the trade. A little consideration of the case will immediately suggest the question why one part of the jewelers' stocks should be compensated for a duty which often represented only 12 per cent. of its value—and sometimes much less even than that—while another part of it suffering from a duty of over 20 per cent. should not be similarly compensated. Judging, however, from the Chancellor's speech, we should think that the reason gold plate was excluded was that he was afraid the £120,000 which he was willing to expend would not go far enough to cover the whole field. But seeing now that the whole of the silver claims have been satisfied, and that there is yet remaining over a quarter of the amount that has been expended, it is only reasonable to advocate that that sum should now be expended in allowing the drawback upon "gold plate." This, of course, is a matter for the trade to take up, and that at once; someone will have to take the initiative in the matter. Unfortunately we are so unorganised that it will mean work for someone. If we only had an Association to take up matters as they crop up the interests of the trade could be protected, and the maximum benefit secured of things which often turn out an injustice and incubus to the trade.

WHY are not bicycles made in Sheffield? Now that the use of these machines has become all but universal, the question is being put with pained surprise. The whole of the material of which they are composed is manufactured here, and the first great improvement on the old bone-shaker was brought out by Beck and Candlish—a Sheffield firm. Nevertheless, we have allowed the trade to gravitate to other places. Perhaps we have been busy with what were considered more important matters, and so allowed the making of bicycles on a large scale to slip through our fingers. As things have turned out we now see that we have made a mistake, and that we have lost what would have been no inconsiderable addition to our staple industries.

Notes About Town.

The Trade. It is not altogether an easy matter to gauge the real state of trade during the past month. Many say they have had some very good days, and that on the whole they must not grumble, while others do not appear to speak with such satisfaction.

* * *

Novelties. Christmas novelties have not yet made their appearance amongst retailers. Rising suns have increased in size, so much so as to be sometimes inverted, and worn over the chest from the throat, where the centre large stone or cluster takes the place of a brooch, the limbs or rays passing downwards and outwards in all directions. A Bond Street firm has also added a patent for converting into epaulettes the diamond ornaments whose office was previously confined to brooch and head ornament.

* * *

Jewelry Fashions. There is nothing particularly new just at present, but rather developments upon old lines. Swallows are still worn, in perhaps larger sizes and more graceful and fantastic poses. Herons and peacocks are also great favorites. But on the whole butterflies and other insects claim more attention than the avifauna. Both of these lend themselves to the utilisation of colored stones, which still being very fashionable command a greater sale. "Eyed" butterflies especially are well to the front, with colored stones in the eyes. Of course they lend themselves to slight conventionalising, or the manufacture of new species from the artist's own fancy; still, the effect of some is very fine and imposing. Beetles and spiders of large proportions still retain their hold, and new ones appear and others disappear from many West-end stocks, by which we infer they are selling.

* * *

Sprays. Long sprays, both ivy and other simple forms of leaves, and elaborate orchids are on the increase, most of them being made detachable and transposable, epaulettes being included.

* * *

Naval Jewelry. The Navalries has suggested a few new things. "The Victory" is mounted as a gold charm; and several old historic swords have been reproduced as brooches "From the Royal Naval Exhibition."

* * *

Honors not often Obtained. We are pleased to see that the Khedive of Egypt has been pleased to confer the honor of receiving the Imperial Order of Osmanieh upon Mr. George James Godwin, of the firm of Messrs. Godwin and Son, High Holborn, as an expression of satisfaction and appreciation of the manner in which Mr. Godwin has carried out the orders of His Highness during the last two years.

* * *

English Watch-Case Manufacturing Company, Limited. A Company under the above title has been registered by Messrs. Jordan and Sons, 120, Chancery Lane, W.C., with a capital of £10,000, in £1 shares. Objects: To establish and carry on the business of manufacturers of watch-cases of every kind, by machinery or otherwise, at Birmingham or elsewhere, in accordance with an agreement made August 17th, between John Ashwin and Philip Hy. Laurence of the one part, and C. H. Kingstone, on behalf of the company, of the other part. There shall not be less than two nor more than five directors. The first shall be F. F. Reading and L. E. Neale. Qualification, fifty shares. Remuneration to be determined by the company in general meeting.

Country Notes.

MOST of the Coventry watchmakers are reported as exceptionally busy, many of them having good orders on hand.

WE are somewhat surprised, and still more sorry to see the half-hearted manner in which the shares were taken up for the proposed Watch-Case Manufacturing Company. After all, founding and working a good business is altogether a different thing from forming a company. It is not the genuineness of a concern that insures floatation, but the way it is managed and advertised. We recently knew of the case of a large concern having outgrown the owners, which was making extraordinary profits. They therefore thought they would turn it into a company. Being such a sound affair they thought their own solicitors could manage the whole thing, and that advertisement was quite uncalled for, but it proved a miserable failure!

THINGS are looking a little brighter at Prescot just now in the watch line, otherwise they have not been so busy during the last six weeks.

THE Horological classes at the Coventry Technical Institute commenced their winter sessions on Monday 14th ult.

THE Coventry and Midland Photographic Society enjoyed a delightful and successful excursion on the 5th ult.

THE contest of the English Watch Cycling Club took place on the 5th ult. on fifteen miles of road between Birmingham and Coventry. J. Cadden was first; A. Mazey second; Watkins third; and A. Reeves, scratch, fourth.

WE are glad to see the names of members of the trade figure amongst those interested in advocating the University Extension.

A NEW industry is likely to spring up for Prescot, by the development of the newly-formed "Prescot Cycle Company, Limited," which has a capital of £10,500. It appears the public believe more in making cycles than watches.

THE new wing of the Lancashire Watch Company is approaching completion, which is the sort of thing we like to chronicle. At the late special meeting of the company Mr. W. D. Houghton, of Warrington, was appointed chairman, in the place of the late Mr. S. H. Hartley.

A WELL attended dinner of the Coventry Watch Jewel Makers' Co-operative Society was held at the Watchmakers' Arms, Councillor Dodwell presiding, who gave an excellent speech upon co-operation; the benefits of which were further dilated upon by the vice-chairman, Mr. J. Hinton, and the secretary, Mr. Lee.

ACCORDING to many accounts the McKinley tariff is not annihilating trade with the United States altogether, as there are several really good orders now on hand for America. The settlement of affairs in South America is beginning to tell, and important indents have been already received. Orders from Australia are fairly numerous, and better hopes may be held out for N. S. Wales than was expected a short time ago, as they have again decided in favor of free trade.

Birmingham Notes.

(By our own Correspondent.)*

AT last we are glad to be able to report that the "dull period" that has lasted so long is rapidly passing away, and that things are once more resuming a very lively aspect. The home trade is especially good, but so much cannot be said for the export. Of course there is ample time yet for a good season trade to be done with the Colonies, but most firms have learned to expect to be busy in that department ere this. We do not gather that any special branch can be said to call for particular attention, but the general impression is that all branches of the trade are sharing in what we may now confidently consider to be the permanent improvement.

SETTING off the above, we find that the old-established and well-known firm of gilt jewelry manufacturers, Messrs. C. Timings and Son, of Birmingham, have just put on the market a new chain which they make in a variety of patterns—such as Newgate fetters, Prince of Wales, the favorite graduated gold curb, etc.—from seamless rolled gold plate. This new invention of metal is, we understand, an American idea, and on examination we are bound to admit its superiority over all other kinds of rolled gold plate. The articles manufactured from it, for beauty of finish and durability of wear, stand unquestionably without an equal. Every practical jeweler knows that the great blemish in all rolled plate or filled jewelry hitherto made has been the objectionable seam around the ring or the links of the chain. Many devices have been adopted to hide this seam, such as burnishing, blending the seam with gold solder (which, of necessity, must be of a lighter color than the gold itself), or covering the seam, when placed on the inside, with an extra surface or lining, thereby only making matters worse by exposing two seams. Whatever plan has been resorted to, the seam still remains, showing itself sooner or later by wear, by contact, or any other one of the dozen causes that brings out the tell-tale defect. During the last century ever since the introduction of jewelry of this class, inventive minds have been at work to produce a compound wire that would be seamless and solid; a wire that would produce articles to rank with the solid gold or silver ones, and yet be sold at the prices of the old-fashioned seamed plate goods. After years of experiments this object has at length been attained, and Messrs. C. Timings and Son are to be congratulated upon having introduced into the market what is now causing a great sensation in American jewelry circles, the wire being largely used by the leading chain, ring, and bracelet manufacturers of the United States.

MR. F. BRUETON, of 2, Northampton Street, has registered a new ring-case, and it seems to have become very popular. The idea is certainly a good one, and finds much favor amongst travellers, inasmuch as it enables them to display the rings with ease and to advantage. The case is made to hold twelve rings, and serves its purpose well in window-dressing.

IN our last issue we gave the address to which Mr. J. H. Starling had removed as No. 8, Augusta Street. He wishes us to state the number is "7" in that street. He has gone largely into the manufacture of best brooch tongs, and is devoting a large portion of his establishment to that purpose. We are given to understand that some of the best brooch tongs made are turned out by him; there is always a good stock kept in hand, so that orders may be executed at the moment. This new branch does not interfere in any degree with the artistic work he has the reputation for, and is yet continued in the same style under greatly increased facility.

ASHBURTON borough is presided over by a portreeve, a honorary office of great antiquity, and of which the inhabitants are very proud. The lords and past portreeves of the borough have lately decided to present to the town a chain of office to be worn by the portreeve for the time being. Messrs. T. and J. Bragg, of Birmingham, have been entrusted with the commission to manufacture it from designs submitted by them. The chain and badge will be a very elaborate piece of work, with various arms enamelled on the principal links, giving it a very beautiful effect. The badge is of good size, has a coronet border, and is surmounted by a civic crown, Ashburton being a royal manor of Queen Matilda. In the centre of the badge is a charming enamelled antique blazon, whereon is displayed the arms of Ashburton—an ancient abbey church, connected with the history of Bishop Stapleton, sun, moon, cross of St. Andrew as the patron saint, and the teazle as representing the woollen trade of Ashburton—in quaint heraldic colors. Around this is the name "Aysheberton" and the motto "Fides probata coronat" in gilt letters on a crimson enamel ground. The centre link from which the badge depends is occupied by a shield, bearing the arms of the See of Exeter and of Bishop Stapleton empaled, surmounted by a mitre, and surrounded by the wreath of teazles. The reverse of the badge is occupied by the following inscription:—"Presented by the Lords and Past Portreeves to the Borough of Ashburton, 1891." The links of the chain are of two patterns, one being of oblong shape with semi-circular ends, while the sun, moon, and St. Andrew's cross form the basis for ornament. The other link is the letter "A," being the initial of the town. The name and date of office of the Portreeve by whom the link is presented is engraved on the cross on the oblong links. There are also two round shoulder links bearing the arms of two lords of the manor—Lord Clinton and Sir R. Jardine—in correct heraldic colors, that of Lord Clinton having the coronet and crest over it, and Sir R. Jardine's an open helmet *en face*. The chain and badge are finished in the best style, and will form a very curious and interesting compendium of the history of the place.

ANOTHER very handsome gold chain of office is being made by Messrs. T. and J. Bragg for the ancient borough of Okehampton, the commission being given by J. D. Prickman, Esq., mayor, who has taken a great interest in obtaining the first portion of what will be a very elaborate civic decoration when complete. The badge takes the form of an oval medallion, with the Royal border of Maltese crosses and *fleurs-de-lis*, as upon the fillet of the English crown, and having a mural coronet over it. The centre of the badge is occupied by the arms of the borough—the three towered castle of Okehampton—in correct heraldic colors, while round it is the motto "Insigne Burgi Ockmenton" in gold letters on an enamelled field. On the reverse of this is the following inscription:—"Charters granted A.D. 1272, 1291, 1623, and 1684. Created Municipal borough 1885." The larger links are of shield pattern, connected by other links, with alternating English roses enamelled white and red. On the shield links will be engraved the name and date of office of each successive mayor. The centre link, from which the badge depends, is a large Tudor rose, blazoned in enamel, and surmounted by a Royal crown. The whole of this will be in gold Hall-marked, and is arranged for other links to be added year by year. It will worthily represent the borough at the Mansion House gathering next month.

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Sheffield Notes.

(By our own Correspondent.)*

THE installation of the Master-Cutler with its antique ceremonial once more reminds us that the year is advancing, and it is with something of a shock that we realise that summer is nearly ended almost before we were aware that it had well begun. Nevertheless, business men are not sorry to turn the corner of the Cutlers' Feast and Doncaster Races, two events which have been long understood to mark the dividing line between the dead season and briskness of trade. The former has been equal to any of its predecessors in point of effect. The display of silver on the tables, consisting as it did of the choicest exhibits of the various show-rooms of the town, demonstrated very fairly the stage of artistic development to which the silver trade of Sheffield has attained. Mr. Belfitt, like his predecessors in office, would doubtless have liked some statesman of the first rank to have graced his banquet, but the season of the year at which the Cutlers' Feast is held is unfavorable to this, and the usage of centuries cannot be set aside even for the luxury of having a guest on whose utterances expectant Europe waits.

AS for the races, everybody is certainly not expected to go there, but everybody goes all the same. It is just as well that people from a distance having business to transact in Sheffield should understand this. This year the carnival of the North has been favored with the most glorious weather, and, as a consequence, the difficulty of finding business men where one naturally expects to find them—namely, in their offices—has been proportionately greater. However, as incessant application to business will now be the rule up to Christmas, one need not grudge active workers the last opportunity for relaxation which the season affords.

AS regards the execution of orders, the long-felt impatience of manufacturers at the systematic neglect of work on the part of their employees is beginning to find a voice. Even well-conducted workmen seem to find the attractions of a big cricket match irresistible. As nearly every Monday and Tuesday during the season is devoted to one of these, the interruption to business is most serious. Facilities for the keeping of Saint Monday are increased by the almost universal custom of piecework in the staple trades of the town. With the keen competition on the part of foreign countries which we are now encountering, this state of things cannot continue without some amount of danger to our interests. Hence the attention which is now being given to the matter.

THE feeling evoked by the death of the late Lieutenant West is characteristic of Sheffield. Although occupying a position of great responsibility in one of the largest electro-plate manufactories of the town, he was in no sense a public man. His relation to the silver trade was not technical, but was brought about by the influence of Col. Bingham, who is at the same time head of the firm of Walker and Hall and chief of the Sheffield Engineers, of which regiment Lieutenant West was originally drill-instructor. The healthy out-door tastes of all classes of Sheffielders renders a man in Lieutenant West's position, who may at the same time possess popular social qualities, what the Americans would call a "prominent citizen." This accounts for the semi-public character of his funeral and the large amount of sympathy evinced at his somewhat sudden and altogether unexpected death.

IT has long been a kindly custom for the Master Cutler to entertain his staff in the hall of the company at the close of the week in which the great Feast is held. Out of this has grown another custom, that of the workmen presenting their employer with some tangible token of their respect. This year Mr. Belfitt has in this way been made the recipient of two genuine works of art. The first, a plaque designed by Morel-Ladeuil, and executed by Elkington and Co., it is made in repoussé silver and damascened steel, and represents the well-known trial scene in "The Merchant of Venice," where Portia lays down the law to the great discomfiture of Shylock. The second is a massive cup of sterling silver, manufactured by Messrs. Atkin Brothers, of Truro Works, Sheffield. The cup, which is 18in. in height, is fluted in the lower portion, the upper part being plain in order to bear the inscription. The Mistress Cutler was also presented with a highly artistic crescent-shaped diamond brooch with ornament to match, all in fine brilliants.

THE School of Art is still doing yeoman service as regards the staple trades of the town. The report of the examiner in the National Competition this year is most favorable. Special and flattering mention is made of a design by Miss Amy Hobson for a coronet and bells for the holy scroll of the law. The student is commended for the elegance, lightness and simplicity of design, and also for founding it on good Persian type, which is obviously suitable for this kind of metal work. A silver medal is also awarded to Mr. W. P. Belk, for a sheet of daggers and sheaths, showing decided jewelers and goldsmiths' feeling for daintiness and elegance of design. The prize list this year has never been equalled in the history of the Sheffield School of Art, and may be looked upon as the result of the efforts recently put forth to render the school worthy of its old reputation.

SOME may consider it matter for regret that no medal has this year been awarded for any drawing in water-color or painting in oils. The fact is, however, that the school is still developing the idea of its founders, namely, the training of designers in the staple trades of the town. How far it has been successful in this may be seen in the show-rooms of our electro-plate manufactories, and in the more graceful outlines of our products generally.

ONE hears old silversmiths talk of the times when a new thing in teapots was produced by simply turning an old one upside down. That was a very long time ago, however, presumably before the days of Young Mitchell and Godfrey Sykes. At the present day, although the Sheffield School of Art produces no great painters, it has in addition to improving the artistic excellence of our manufactures permeated the community with a sense of the beautiful.

AS was once remarked in these Notes there is not much visible connection between silver chasing and street paving. Mr. Ernest Hill, of 20, Charles Street, however, thinks otherwise. Seeing him the other day engaged in the somewhat incongruous occupation of superintending the laying down of some wood pavement in Bank Street, I could not resist the temptation of asking him for an explanation. He affirmed that had he not been a chaser the idea of the "Carmaxill" pavement would never have occurred to him. This somewhat outlandish name is made up of an ingenious combination of the names of three of the principle proprietors of the company which is working the patent. As the highway committee have just given an order for a certain length of street to be laid with the new pavement, it is to be feared that Mr. Hill will become reconciled to his having left the manipulation of silver for that of wood and iron.

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The Markets.

DIAMONDS.

Contrary to expectations in certain quarters, diamonds have not fallen or altered in price very much. Indeed, in the first part of the month there were more buyers than diamonds, and it was suspected that a rise rather than a fall would ensue. The splendid report of the De Beers' meeting on the 24th ult. seems to point to their being equal to any suspected emergency. What the influence of the development of the Premier mine will be we cannot say, but it seems too much to think the De Beers will be able to hold out against *all conditions* that may arise, as our diamond field's letter of this month shows the probability of more diamonds coming in from other sources. There is also some agitation for a diamond tax, although we do not think for a moment it will be imposed.

SILVER.

During September silver was pretty firm and constant commencing the month at 45 1-16, which it maintained a few days, then fell slightly; but in a day or two an elevating tendency set in which it maintained to the middle of the month, after which there was a slight downward tendency with trivial fluctuations, and on going to press was 45¼.

COPPER.

Copper has been quiet and steady throughout the month opening at £52 12s. 6d. G. M. B., since which time there has been a slight decline in prices.

TIN.

Tin has been quiet and steady during the early and middle parts of the month, opening at £91 10s., which has only suffered small alterations.

SPELTER

Spelter has been very steady all through the month, remaining practically at £23 15s.

LEAD.

Lead has been quiet during the whole of the month with a slight decline, opening at £12 7s. 6d., it showing a steady fall of a few shillings at a time.

QUICKSILVER.

Quicksilver has been somewhat dull, varying from £7 5s. to £7 10s.

A Burglary Insurance for the Trade.

We print in this issue the prospectus of a new Burglary Insurance company—"The Goldsmiths' and General," now being formed chiefly in the interests of the Jewelry, Pawnbroking, and kindred Trades, to the members of which the shares are offered in the first instance. Although burglary insurance has been before the public for about only a couple of years, it is now looked upon as a necessity—the feeling of relief and security afforded by a policy being deemed by many of our readers as of far more importance than the trifling subscription. A cursory glance at the history of burglary insurance evinces the fact that this company starts under most auspicious circumstances and conditions. Granted that people have realised the necessity of burglary insurance, and that many are now enjoying the ease and freedom arising from knowing that they will be indemnified against all losses of this kind, it follows that an easy means of bringing the process to the hands of all will ensure a great popularity for the principle. Of course, the whole subject is only in its infancy, but the fortunate part of it is that, so far as the new company is concerned, its manager that been associated with the first company of the kind from its inception. But as that company has now amalgamated with another that is not giving the attention to the branch of the business that immediately affects our trade, he considers—after having all the experience connected with the other—that the interests of jewelers and allied trades are sufficient to maintain an office of their own. Managed by one who has special knowledge of the trade, the company will be able to profit by all the experience of the other company and start under most favorable conditions.

An excellent working board has been secured, and the management has been entrusted to Mr. J. M. Buchanan, before alluded to. We have gone very fully into the matter with this gentleman, and we think our readers may safely subscribe for shares, as the investment appears likely to turn out quite satisfactory. It will be noticed that a dividend of 8 per cent. per annum must be paid to the ordinary shareholders before the deferred shareholders—who are forming the company—participate, thus showing their confidence in the future of the concern.

Technical Instruction at the Birmingham Jewelers' Association.

Not to be discouraged by the insinuating remarks often dropped in certain quarters, the above laudable Institute has issued its syllabus for the ensuing session, and we should advise one of our contemporaries to attend the classes for a few years. It would be of very great service to them—firstly, in preventing them using their scissors and paste over such worthless trash as they sometimes copy; and secondly, it would teach them the value of technical education, or at least what it really is.

Instruction will be given and examinations held in the following subjects:—Elementary stage. The variety of trades into which the manufacture of personal ornament is divided: Modes of work, tools employed, engraving, repoussé, chasing cast figures, wire decoration, enamelling, finish of goldsmiths' work, shaping and turning of geometric forms as bases for decoration, getting out engraved patterns, tracing and beating in embossing or repoussé. The honors stage will also include:—Alloys, stamped work, models and casting, precious stones and setting. The practical department further requires candidates to supply a specimen of mounted, engraved, chased or repoussé, and enamelled work. We wish them the success they deserve, while we congratulate the committee upon the extensive syllabus.

THE VALUE OF ADVERTISING.

Recently, by a clerical error, for which we are very sorry, we unfortunately left out the advertisement of one of our clients, whereupon we received the following letter: "I notice my advertisement has not appeared in this month's issue. I feel extremely annoyed, inasmuch as it would have brought me applications and business." We trust, however, that he will accept our sincere apology. A short time ago one of our principal advertisers wrote: "I have to thank your valuable paper for the great increase my business has received since I began advertising in it." With almost every number we have evidence of orders coming through advertisements. We hope shortly to bring out some highly artistic advertisements, which cannot fail to command attention and admiration, and thus secure increase of trade.

Mr. Herrmann's Paper.—We regret that owing to an accident in transit we are unable to continue Mr. Herrmann's valuable "Answers to Questions" in this number, but we shall do so in the next.

A subscriber asks for the address of the "Jewelers' Supply Company," as he requires a further supply of patent watch tickets, No. 42,386. Perhaps some other reader can inform him where he can get them.

British Association Meeting of 1891.

THERE are few years when so many items of practical importance bearing upon our united trades are brought forward at the B. A. meetings as was the case with the last. Paper after paper bristled with things new and important at every point. As, however, it is impossible to reproduce them *in extenso*, we shall select some extracts which we think of great use and importance.

In the course of his presidential address, Professor Huggins said:—" Stas, in a recent paper, gives the final results of eleven years research on the chemical elements in a state of purity, and on the possibility of decomposing them by the physical and chemical forces at our disposal. His experiments on calcium, strontium, lithium, magnesium, silver, sodium, and thallium show that these substances retain their individuality under all conditions, and are unalterable by any forces that we can bring to bear upon them." So that for the present we are safe in regarding these as elements. Professor Rowland looks to the solar lines shown in the spectrum, which are unaccounted for, as a means of enabling him to discover such new terrestrial elements as still lurk in rare minerals and earths, by confronting their spectra directly with that of the sun. He has already resolved yttrium spectroscopically into three components, and actually into two.

All the heavenly bodies are seen by us through the tinted medium of our atmosphere. According to Langley the solar stage of stars is not really yellow, but even as gauged by our imperfect eyes, would appear bluish white if we could free ourselves from the deceptive influences of our surroundings.

The success of photographs taken by Dr. Gill at the Cape Observatory, and the Brothers Henry at Paris, astonished the astronomical world, and suggested to the Parisian astronomers the idea of making an international chart of the stars. The photographing will be undertaken by eighteen observatories in different parts of the world, provided with similar instruments which, in the British dominions and at Tacubaya, have been constructed by Sir Howard Grubb. As each plate is limited to four square degrees, with exposures corresponding to forty minutes at Paris, and each star, to avoid possible errors, is to appear on two plates, over 22,000 photographs will be required. It is expected every star down to those of the fourteenth magnitude will be shown. Besides the plates to form the great chart, a second set for the catalogue is to be taken with a shorter exposure, only showing stars to the eleventh magnitude.

In the course of his address Professor Roberts-Austen said it might be safely concluded that in the blast furnace the peculiar action of carbonic oxide, in taking up iron and redepositing it at a higher temperature, plays an important part, and doubtless aided the carburization of iron by cementation. His own experiments showed that iron, at an elevated temperature, can be carburized by the diamond *in vacuo;* that is, in the absence of anything more than "a trace" of an elastic fluid, or of any third element. Osmond has further shown within the last few months that the action between iron and carbon is a mutual one, for though carbon in the pure diamond form carburizes iron, the metal in its turn at a temperature of 1,050deg. attacks the diamond, invests it with a black layer, and truly unites with it. (The importance of this in seeking to account for the genesis of the diamond is extremely great.—Ed.) The question of the direct carburization of iron by filtering the molten metal through carbon promises to be of much importance, for at present two millions of tons of steel, made in the Bessemer converter in this country alone, are recarburized after "the blow" by the addition of spiegeleisen (a cast iron containing a very large amount of carbon and some manganese). He exhibited and described his self-recording pyrometer. In this instrument thermal junctions of platinum, and platinum containing ten per cent. of rhodium, are connected with a reflecting galvanometer. The spot of light from the mirror of this is caused to fall on a slit before which a photographic plate passes at a given rate, by which means a curve is traced corresponding to the variations in temperature of the heated thermal junction. The other junction is kept at a constant temperature by immersion in water. Temperatures up to the melting point of platinum can be determined within 10deg. The curves of cooling of several alloys have been determined. The alloy of gold and aluminum differs from others, such as that of platinum and lead, in that there is no break in the curve at the point of solidification of the alloy. He further remarked that Great Britain and her colonies produce about thirty-eight per cent. of the gold supply of the world. As an indication of the scale on which operations are conducted, it may be stated that in London alone one ton of gold and five tons of silver bullion can easily be refined in a day. No pains have been spared to perfect the method of assaying gold and silver. During his twenty years' connection with the Royal Mint he had been responsible for the accuracy of the standard fineness of five hundred and fifty-five tons of gold coin, of an aggregate value of seventy millions five hundred thousand pounds sterling. The extraordinary development of the platinum industry is due to the skill and enterprise of the firm of Johnson, Matthey, and Co. They are able to melt in a single charge two and a half hundredweight of platinum, and in one operation extracted a mass of palladium valued at £30,000 from gold-platinum ore actually worth more than a million sterling.

One of the most remarkable points in the whole range of chemistry is the action engendered between two elements capable of reacting by the presence of a third body. It may be, and this is the most wonderful fact of all, that merely a trace of a third body is necessary to induce reaction, or to profoundly modify the structure of a metal. It is hoped that future research will throw further light on this important fact. In "drossing" molten lead the oxidation of the metal is greatly promoted by the presence of a trace of antimony, and in the separation of silver from molten lead the action is facilitated by the addition of zinc. It has been shown that aluminum has a remarkable effect in protecting zinc from loss by oxidation, and, further, the presence of one-thousandth part of aluminium in the metal is sufficient to do this.

Mr. Crookes described some experiments on the electrical evaporation of metals and alloys. If a brush of gold be placed in a vacuum tube and connected with the negative pole of a coil, at ordinary temperature, with a piece of glass underneath the gold, a metallic mirror appears on the glass, increasing in thickness to a leaf which can be peeled off, and is perfectly homogeneous. Films of silver and platinum can be obtained also. Different metals evaporate at different rates, one or two, such as aluminum and magnesium, being apparently non-volatile. It is possible, in the case of the aluminum-gold alloy discovered by Professor Roberts-Austen, to separate a portion of the gold from the aluminum by this means.

Mr. T. Turner gave an account of experiments which he had made to discover the cause of the red blotches which often appear on the surface of brass sheets on rolling, greatly to the annoyance of Birmingham manufacturers. It is found that they are due to the erosion of the zinc by the chlorides present in the solution in which the brass has been pickled, and in the water in which it is afterwards washed, care not being always taken to prevent such chlorides from drying on before rolling.

The Diamond Fields.

(By Vaalite.)

I HAVE often referred to the turbulent, unsettled, and dissatisfied state of affairs that exists at the Diamond Fields. When there is not one thing there is another. A large number of people, however, are always willing to credit the De Beers monopoly with all that is bad and harmful. There are so few people even in our mother country who can take a broad and comprehensive view of things, but judge the propriety of a thing by its direct action upon themselves and one or two others. So that it is not surprising to find men out here in this mushroom district, where they rest more upon their own individual actions, and are more cut off from the rest of the world, doing the same thing. The positions of the members of the De Beers company as statesmen is anything but enviable. To be a statesman in the eyes of many is to be a man who would sacrifice the interest of the staple industry of the colony to a few who happen to be there for the moment. The demands which are constantly being made at meetings are simply monstrous, and no one who stands aloof can help admiring the calm, cool firmness with which Mr. Rhodes is acting all through this most critical episode in the history of South Africa. There have been three reports of the distress committee, the substance of which I feel assured it is necessary for your readers to know, as the present state of things has such important bearing upon the future of the diamond trade. The majority report runs:—"On the whole your Committee have been reluctantly forced to the conclusion that as distress and poverty in Kimberley have arisen from natural causes, so it must be left to natural remedies; that it is an open question whether the opening of any new mines would permanently promote the trade and prosperity of Griqualand West and the colony," which I venture to think is a common sense view of the case. They admit that the closing of Bultfontein and Du Toit's Pan has been detrimental to the township of Beaconsfield, but doubt whether the numbers of those employed in the industry have fallen; certainly white men have not, but, on the other hand, show a good increase. Of the two other reports one advocates the opening as public mines "all such mines as the Wesselton." That greater powers should be given the Government in regard to mines—some of which are ridiculous. The other report is content in mainly echoing the conclusions of the majority committee, but advocates some alteration in the mining laws. These reports, however, have to be submitted to the House of Assembly. Meanwhile, every organisation is up in arms against the majority committee calling upon representing members to resign, and all that sort of thing.

Turning from what is to be done *with* the mines to what is *being done in* them, I will first refer to the Wesselton, or Premier; without laying claim to the laws of priority, the latter is certainly the better name, as the defining of the mine has shown it to be by far the largest one. In seven weeks development they obtained no less than 23,000 carats, valued at £30,000. That the stones were fair quality is certain, as the valuation was made by Mr. Wallace, so long connected with the De Beers. There were a fair sprinkling of medium sizes, and one a 30-carat stone.

There is nothing, however, settled definitely as to the future of the mine. Four of the five claimants for the other half of Ward's concession have received £10,000 between them; but the fifth one, Mr. J. Walsh, will not come to terms. The case is now pending in the High Court. It is almost incredible that another claimant, who is now in prison, has sent out and advertised his prior claim. One wonders when they will cease to come.

The De Beers recently sold about half a million's worth of diamonds at 24s. They have a magnificent statement ready for the next meeting, and it is said they will also then publish their intended future policy.

Things are looking up a bit again at Otto's Kopje, but this time will settle the question which people with the best judgment maintain as a fact, viz., that it is in reality not only a diamond mine, but a paying one. At any rate, Mr. Lisle, whose abilities are so well known here, has thought it worth his while to resign his position as manager of the Kimberley mine under the De Beers Company, and not only to take the management of it, but invest his money in it. Over a thousand diamonds of excellent quality have been got from the yellow ground; the blue, so far as I know, has not yet been touched. Mr. Lisle considers the yellow very similar to that of Kimberley; but does not consider they are washing in the richest part. As I believe the yellow has been proved to a depth of 80ft., it is fairly certain he will not be mistaken, as so large an amount of material as this could not be the result of subaërial denudation from other mines. There is, further, another thing in their favor in washing yellow ground, and that is, it does not have to be laid out for six or twelve months to weather, but can be operated upon immediately.

The North-East Bultfontein keeps on good work, both in washing, which gives on a fair average four or five thousand carats a month (although it is frequently mainly re-washings), and the storing of blue upon the floors, which sometimes amounts to 10,000 loads a week.

The output of Jagersfontein in July was 9,383½ carats, valued at £16,805, by which it is evident either that prices are not going up, or that the sample was below average.

Taking all the river diggings, we find that in 1887 the average price was 40s. 10¼d.; in 1888, 37s. 6½d.; in 1889, 53s. 1d.; and in 1890, 56s. 4½d. By cable from England we hear, however, that "demand is greater, and prices harder."

There is a great deal of successful prospecting going on, and new mines are continually being announced.

At Thompson's Kopje the yellow upon which they are now at work is similar to that at the Premier, and we are informed that the De Beers have a watchful eye upon it.

Reports of extensive alluvial diamondiferous ground over 18ft. thick are coming in from Klipdam on the Vaal and several other places, some laying at long distances, some affirming that there are 200 square miles of diamondiferous deposits between the Vaal and Hartz rivers, which will solve the problem of distress in Kimberley.

Another thing that is attracting a good deal of attention in Kimberley is the Prince Albert goldfields, but accounts of them differ greatly. One account says they extend for thirty miles, and that men are panning about three or four ozs. a week. But there is evidence that they reach to thousands of square miles, both as alluvium and reefs. In my next I hope to send you particulars of this apparently wonderful new goldfield.

At the last meeting of the American Jobbers' Association it was stated that the prices of watch-cases and movements had been reduced fully forty per cent. in six years, during which time the daily output had doubled, standing now at 5,000 per day, which had been accompanied with a steady improvement in the quality. Encouraged by the success attending the introductions of the Geneva Optical Co's. (Chicago) optometer into this country, Messrs. Botwright and Grey are about to introduce other of the firm's specialities, which we shall describe from time to time.

Items of Interest.

Pawnbroking on the wane. Our contemporary, *The Pawnbrokers' Gazette*, had an article, on September 12th, on the above subject, which, to use its own words, may be received with surprise, if not with incredulity. According to the Report of the Inland Revenue for the year ending March 31st, 1891, there were only 4,882 pawnbrokers' licences issued, compared with 4,884 of the previous year; a decrease not very large, it is true, but it is supported by a set of valuable statistics which shows that the number of pledges taken in is less, and that the average amounts per pledge similarly suffer when compared with business in past years, while the number of plate licences has increased; consequently "one fact is clearly brought to light, pawnbrokers, as a body, are stationary, while jewelers—or, at least, those trades which deal in small articles of plate and jewelry—are increasing in numbers." The article contains statistics of great value to the trade.

* * *

A Noiseless Alarum. A correspondent in a contemporary writes:—"My watch does not differ much in appearance from an ordinary watch, but, neatly soldered on to the end of the hour hand is a hairlike piece of platinum, long enough to reach to the outside of the dial, and just clearing the watch-case. Fixed inside the case, under the glass, is another bit of platinum with which the hour hand comes in contact at the time fixed. The front part of the case is made so that it will revolve if turned with thumb and fingers, so it can be set to within two minutes of any time wished. The front and the back of the case are insulated from each other by vulcanized indiarubber, so the electric current can only pass through the watch during the seven or eight minutes the two bits of platinum are in contact. The watch fits on a stand made expressly for it, one wire from the battery is connected to a terminal in contact with the back of the watch, and another wire runs from battery to shocking-coil and from coil to front of watch, and there's the circuit complete. Two flexible conducting cords from the coil, one fixed to each ankle, leave the hands free to turn off current by means of a switch, fixed to head of bedstead just above pillow, the moment you are awake. I must confess I prefer an electric vibrating bell rather than the shocking-coil. There is no need to bury it under the clothes to prevent it waking up everybody, as you have to do with an alarum clock, but all you have to do is to turn off the switch and the bell is silent. A watch like mine can be had for £2, shocking-coil about 18s. (or, if a bell instead, 8s.), Leclanché battery (two No. 2 cells) 4s. ready charged, a dozen yards cotton-covered line-wire 1s., switch (one way) 1s. 6d."

* * *

New Tariffs. According to the new agreement between the United States and Spain, watches and clocks, of gold, silver, or other materials, with cases of stone, wood, or other material, plain or ornamented, of American manufacture, are to be admitted into Cuba and Porto Rica at a reduction off duty of 25 per cent.

* * *

The Appreciation of Insignia. It is reported that the Hendon Corporation have decided to sell their ancient mace for not less than £400, and to apply the amount realised towards the extinction of the debt of the borough. This step was taken at a recent meeting of the Town Council, six members voting for and two against. It appears they are not so proud of their ancient insignia and armorial bearings as Mr. Smith, an auctioneer of South London, who was recently summoned at the Lambeth Police Court for wearing a lion rampant upon his signet ring, and was fined £1 and 5s. costs, and had to take out a licence for armorial bearings. This is a course not often adopted by the authorities, but it is just as well to remember that we have thousands of times been "accessory before and after the fact" to loyal subjects breaking the law.

* * *

An Odd Clock Case. Visitors to Folkestone are familiar with the paper weights and other ornaments, made by sticking the small pyritized fossils, found in the Eastwear Bay, into the gault clay. In a similar manner an ingenious clockmaker has recently employed all the odds and ends, such as pieces of watches, wheels, metal chains, and jewelry, held together with a cement, as a clock case, the whole being subsequently bronzed.

* * *

New Chimes. When the Rev. J. Wardale, of Datchworth, Herts, was about to present a turret clock to the parish of Pembridge he found that although he would have liked to have given one with the usual chimes, there were only five bells all told, viz., G, A, B, C, D. Usually under these circumstances he would have been advised to fall back upon the ordinary ting-tang, but the reverend gentleman not only understood something about clocks, but he was well up in music too, and accordingly he composed the following chimes, employing the G for the hours:—

First Quarter—B, G.
Second Quarter—D, A, B, G.
Third Quarter—G, C, A, D, B, G.
Fourth Quarter—D, B, A, C, B, D, C, A.

We think this a splendid example of what might often be done, as the sounds produced are by no means like a makeshift, but rather call to mind some of the sweet strains of well-known chimes.

* * *

Specimen American Clocks. A gigantic, and at the same time somewhat remarkable, clock has just been set up after a labor of some years by Mr. Alfred Speer in his private park at Passaic. The dial is 48ft. in diameter, and the minute hand 24ft. long. The hands will be illuminated, which will enable one to see the time at night five miles away. It is operated by an electromotor, which in turn acts in response to a clock in Mr. Speer's office. There are further electro-synchronising details for transmitting time from the large clock to railways, etc.

Messrs. Tiffany and Co., New York, have just turned out an astronomical clock with seven dials, in addition to the main dial; one shows the relative position of the earth to the sun at any time of day or night; another the time at the different meridians of the globe and at twenty-seven principal ports of the world; others the phases of the moon, signs of the Zodiac, etc. The clock is encased in mahogany, about nine feet high; it is for a Philadelphia club, and cost 2,000dols.

* * *

Automatic Figure Watches. There exists, and always has existed, a number of people, some of whom share the highest positions in the land, who are known collectors of automatic figure watches. Anything they have not got, or have not seen, providing it approaches somewhat near a certain standard, they will buy it. What that standard is we do not wish to say; but they are not such subjects as one would find on church windows. If many were to hear of the automata that have been made for the various Eastern courts they would be shocked; but what they would say if they saw the collections of unmentionable dignitaries we are at a loss to think. H. Ringler Locle has just patented an ingenious, simple, and effective action to a watch for the working of automatic figures; the figures shown in the specification are simple, pleasing, and harmless enough, and let us hope they will always be employed upon such innocent subjects, as no doubt they will. Such watches commend themselves to many minds as extra ingenious, and against them nothing can be said —quite the contrary.

An Electro-plated Cat.

The following tale, given as an illustration of "what they do in America," is furnished by a Boston correspondent. A freak of lightning, we are told, occurred the other night near the small village of New Salem, Vermont, at the foot of the Heldeberg Mountains. Arent S. Vandyck occupies an old mansion, in the parlour of which hung a collection of revolutionary swords, one of which was heavily plated with silver. On the night in question a terrific thunderstorm burst, and one particularly fearful crash stunned everyone in the house. Quickly recovering, the family hastened to see what damage had been done. Suddenly the younger Vandyck pointed to an old-fashioned sofa. There lay what seemed to be a silver cat, curled up as comfortably as could be. Each glittering hair was separate and distinct, and each silvery bristle of the whiskers described as graceful a curve as if in life. Turning to the swords on the wall, just over the sofa, father and son remarked that the plated sword had been stipped of all its silver; the scabbard was a strip of blackened steel, and the hilt had gone altogether. The family cat had been electro-plated by lightning! A round hole in a window pane, about the size of a half-dollar, showed where the electro-fluid had entered. It is thought the plating of the cat's surface will prevent decay, and that she may be retained permanently among the family curiosities.

* * *

The Swiss Watch Trade.

The *Economiste Français* publishes an interesting article upon the progress of the Swiss watch trade, which is described as having undergone a complete transformation within the last fifteen years, this transformation being due to the substitution of manufactories for work in the homes of the watchmakers themselves. The opening of these manufactories has led to a decrease in the cost price of the watch and to a great increase in the sale, so much so that at the recent Paris Exhibition the official report of the international jury was to the effect that Switzerland occupied the first rank as regards chronometers, watches of precision, and complicated works, and has made great progress in the domain of watches for common use, this progress being due to the improvement in the equipment of the manufactories. The different schools for teaching the watch trade at Geneva, Neuchatel, la Chaux des Fonds, Locle, Bienne, St. Imier, and Porrentruy, the various associations of manufactories, and the journals dealing with the subject of watchmaking have contributed in no small degree to this progress, which has been very marked in the last six years, the number of watches exported from Switzerland having increased from 2,734,234 in 1885 to 4,431,301 last year; these figures do not include the works and cases exported separately. The value of the exports last year is given as £4,000,000, while the wages paid are so high that many families earn from £12 to £16 a month. This, considering that the cost of living is not nearly so high in Switzerland as it is in the manufacturing centres of England, France, and Germany, enables those who earn these wages to put by a considerable proportion of it.

* * *

An Imperial Musical Clock.

The musical clock which was presented to the Emperor of Morocco, that cost 2,000 guineas, was recently landed at the Custom House, being returned to be repaired, there being no artist in the Empire capable of undertaking it.

* * *

Technical Education in Switzerland.

It is quite evident that Switzerland appreciates the value of Technical Education, and unless something considerably more than has characterised the past is done in this country, we shall be left a long way behind. They have recently made a grant of £22,946 to the Polytechnic of Zurich, and further grants to nine other institutions which teach watchmaking, woodcarving, and drawing.

Mainspring and the Atmosphere.

An American watchmaker says there is a certain time of the year—about July—when the atmosphere has a much greater action on watch springs than at any other time. He says during that time he puts in main springs at the rate of twenty to one compared with any other time. While we do not feel disposed to accept this statement, we think that some valuable statistics of this sort might be got out by jobbers, which might afterwards be compared with the meteorological conditions of the time.

* * *

New Electro Synchronising.

Messrs. Spink, of Gracechurch Street, claim that by their newly-patented system Greenwich Mean time can be available to the public every half minute, and that any number of clocks can be rendered absolutely synchronous with the parent clock at the Royal Observatory. It is expected that some very ingenious inventions for this purpose will be shown at the forthcoming exhibit at the Crystal Palace, which will not be opened till January 1st, 1892, owing to its operations being greatly extended.

"Big Ben's" Ancestors.

Among the miscellaneous records of the Exchequer, preserved in our Public Archives, is to be found the following curious account of a clockmaker, rendered in 1426. Big Ben wants more financing than did his ancestor four hundred and fifty years ago. The details of the mechanism here given are of peculiar interest: "Particulars [of the account] of Agnes Dalavan, wife of Geoffrey Dalavan, deputy of John Lenham, keeper of the clock of [our] Lord the King within his palace of Westminster, for repairs to the said clock, viz., from the feast of St. Michael in the fourth year of the reign of King Henry, the Sixth after the conquest of England, to the same feast next following, viz., for one whole year. Firstly, to Thomas (so far in Latin, then follows in English) [the] clokmaker for makyng of the saylle, when it was broken, 8s. Item, for amendyng of the springes of the barell, 6s. 8d. Item, for wire for the stobill, 12d. Item, for amendyng of the note and the spyndell, 7s. Item, to the said clokmaker for his reward for the said yere, 13s. 4d. Item, for two grete ropes, the toon poys [*i.e.* the one weighing], 52lbs., and the tother poys, 49lbs., price the lb., 1d. ob. [*i.e.*, 1½d.], summa, 12s. 7d. ob. Item, for two cordes of threde for the littell poys [*i.e.* weight], 2s. Item, for bordes, lattes [*i.e.* laths], and mattes boght for to stop the wynd foo [*i.e.* from] the said clok, 22d. (Then in Latin) Also, particulars [of the account] of the said Agnes for repairs to the said clock from the feast of St. Michael in the fifth year of the reign of King Henry, the Sixth after [the conquest] of England, to the same feast next following, viz., for one whole year. Firstly, for repair of (then in English) the extre, 5s. Item, for three lacches and two pynnes of irrynne [*i.e.* iron], 3s. Item, for amendyng of four poleys of latton and four boltes and four clenches ther-to that dragh (*sic*) the hamer, 3s. 4d. Item, for three lenkes and one ryng and one bolt for the hamer, 2s. Item, for amendyng of the lansyng of the orelege, 6s. 8d. Item, for two grete ropes, the toon poys, 51lbs. And the tother poys, 52lbs., price the lb., 1d. ob., summa, 12s. 10d. ob. Item, for cordes for the littell poys, 2s. 2d. Item, to the said clokmaker for his reward for the said yeres, 13s. 4d." Annexed to the proceedings is a fair copy of the above expenses rendered in Latin, and giving their total at "100s. 10d." Agnes Dalavan acknowledges to have received from the Treasurer and Chamberlains of the King's Exchequer the sum of 66s. 8d., so that there was due to her 34s. 2d. It will be noticed that the weights for the King's clock at Westminster required to be renewed every year. In the annexed account Agnes Dalavan further acknowledges to have received during the two years aforesaid four large ropes, weighing 204lbs., and two small cords, not weighed.—*City Press*.

The Crystallography of Gems.

By the Editor.

(*Continued from page 53.*)

The Monoclinic System.—*Continued.*

The Natural Forms of Spodumene.

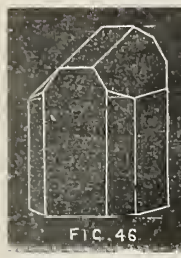

FIG. 46

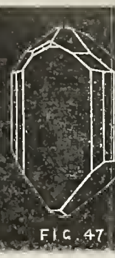

FIG. 47

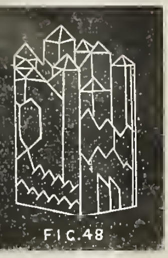

FIG. 48

THE Spodumene is another beautiful gem that crystallizes in the monoclinic system; it is not so fiery a stone as the sphene, but nevertheless often trails closely behind it, while it has other charms of its own equally characteristic, nor is its color suite so extensive; like corundum and several other minerals it is usually more or less opaque, when its colors are quiet and sombre, usually of a dull grey; but gems of this mineral are extremely clear and bright, and vary from perfect white through yellows to pale greens. A lovely emerald-green variety was discovered a few years ago in North Carolina, and named hiddenite (after Mr. George Hidden).

Spodumene crystals are invariably prisms, sometimes singly, and sometimes doubly terminated. The clinopinacoid or face parallel to the clinodiagonal axis is usually striated; frequently at first sight crystals might be mistaken for members of the trimetric system, but it must be remembered that the basal plane is not at right angles to the prismatic faces in front and behind, and hence the top plane, as in figs. 46 and 47, is at an angle of 69deg. 40min., and lateral planes occur in zones bearing this same relation to the vertical.

Fig. 46 is a common form and consists of a combination of a rectangular and rhombic prism with their edges replaced by faces of another rhombic prism (of the same system), terminated by a clinodome, truncated by a basal plane. Sometimes a rhombic prism is terminated by a rectangular pyramid, which may or may not be terminated by a basal plane.

Fig. 47 is a beautiful doubly terminated crystal. It will be observed that the upper and lower pyramids are not the same, from reasons before explained; it exhibits a further multiplication of the prismatic faces, for here we have in addition to the faces of the rhombic and rectangular prisms other faces consequent upon the extension of one of the lateral axes. It will also be seen that the pyramidal faces can be similarly multiplied, that they do not necessarily follow in the same zone as the prismatic faces present, that they may rise at different angles consequent upon the extension of the vertical axis, and that faces may sometimes be developed on one side of the crystal that are not developed on the other.

There is one feature of spodumene which, although belonging to its physical properties, and not to its crystallographic, is, nevertheless, so persistent and asserting, that it nearly always modifies the form in which the gem is found, viz., its remarkable cleavage, which is so perfect that it is easy to split up a crystal into quite thin laminæ, something after the manner of mica, and hence one seldom sees a crystal that has not been split, giving it a more or less tubular form; there are further other cleavage planes in such directions that either prisms or pyramids can be obtained by simple cleavage only. The gem is necessarily very difficult to cut and polish.

In addition to its distinctive color the hiddenite is characterised by an entirely different crystalline habit; it occurs in long prisms very rarely easily "readable," presenting a fractured appearance. I have seen many hundreds of these crystals without being able to find a perfect one; the faces of the rhombic prism are most common, although sometimes both prisms are present, but not always distinct. They are always bright and lustrous, often striated longitudinally, either by more or less straight lines on the clinopinacoid, or by discontinuous angular and somewhat curved ones on the other faces. Often on the prismatic faces, especially the orthopinacoids, there are triangular depressions, the line of the apices of which form an acute angle with the vertical; and not straight as is the case with the triangular depressions on the diamond. The terminations are very jagged and composed of numerous small, low, pyramidal projections. There is no other crystal with which it can be confused; its approach to, or assumption of the rhombic outline, immediately separates it from every other gem except topaz, from which it is readily distinguished by its green color. Gems of a lovely dark, bright "emerald" green have been found up to four or five carats. The crystal illustrated (fig. 48) is from my own collection; it is nearly two inches long and three-sixteenths of an inch wide, so that it has been magnified about three times. It is very difficult to show its shape in an outline drawing; but I trust sufficient details have been given to render it easily recognizable.

LETTERS TO THE EDITOR.

THE QUALIFICATION OF THE OPTICIAN.

To the Editor of The Watchmaker, Jeweler and Silversmith.

Dear Sir,—Your able leader, entitled "The Qualification of the Optician," afforded me much pleasure, and I only hope it may lead to something being done towards placing those men, who by years of careful study have made themselves masters of what you rightly call a *profession*, upon a recognised basis, and thus secure the public against the harm they are likely to suffer from either ignorant or unprincipled dealers in spectacles.

Perhaps it may be urged that oculist-surgeons would be unwilling to allow a portion of their calling to pass out of their hands. My answer to this is that they do not at present, and never will, obtain the whole of the practice. If the course you suggest were carried out their practice would be rather increased than diminished, for a skilled optician would at once recognise those cases where a qualified oculist's surgical or medical aid would be beneficial, and earnestly recommend the patient to seek it; whilst an ignorant dealer in optics would allow the patient to grope his way through life if he could only sell one more pair of spectacles. Again, the medical man would have as much confidence in sending his prescriptions to a man who had passed the needful examination as a physician now has in sending his prescription to a duly qualified chemist. An eminent opthalmic surgeon says: "A large portion of the time of every opthalmic consultant is occupied day after day in repeating to successive patients precepts and injunctions which ought to be universally known and understood." If the above has been written about the patients themselves, it seems reasonable to infer that there is very little cause to fear any opposition to the laudable desire of sellers of spectacles to qualify themselves for supplying optical aid for the public from, at any rate, the bright and shining lights of the profession. "Optician."

Technical Education at the Polytechnic.

THE winter session of the Polytechnic, Regent Street, opened on Monday the 28th of September, under the auspices of the new governing body. Their prospectus announces classes in over 200 subjects, among which watch and clock making and goldsmiths' work are well represented. In connection with the former, the classes are as follows:—

PRACTICAL INSTRUCTION IN JOBBING.[*]

Monday, 6 to 10, and 8 to 10. Fee 9 to 10, 8s; 8 to 10, 6s. 6d. per quarter.

THEORETICAL MECHANICS.

9 to 10; Elem. (2nd Division or Fluids). 8 to 9; Advanced (2nd Division or Fluids).

WATCH AND CLOCK MAKING.

Tuesday.—Elementary Practical Instruction in Clock Making (Syllabus, Stage I.) 6 to 10 and 8 to 10.[†] Fee 6 to 10, 8s.; 8 to 10, 6s. 6d. per quarter. Technical preparatory for the City and Guilds of London Institute Examination in the Ordinary Grade. Fee for the session, 5s.

9 to 10.—Syllabus: Great works of clocks and watches, conditions of their arrangement, mainspring, stopworks, brace and maintaining work, forms of teeth, of pinion leaves, proportions, uniform lead, calculations of trains, motions, convertions, properties and classifications of escapements, dead beat, simple and conical pendulum, recoil, horizontal, duplex, lever and chronometer escapements, conditions of pallets, length and weight of pendulum, pendulum arc, elements of timing, tools, elements of solar and sidereal observations.

Students in this class are recommended to join the classes in Theoretical Mechanics and Mathematics in the Elementary Grades. They will also find it especially advantageous to join the Drawing Class for Watch and Clock Making.

In this grade, in addition to the certificate, one silver medal £2, and two bronze medals are offered by the City and Guilds of London Institute.

THEORETICAL MECHANICS.

8 to 9; Elem. (1st Division or Solids).

Wednesday.—Medium Practical (Syllabus, Stages II. and III.) 6 to 10 and 8 to 10. Fee 6 to 10, 3s.; 8 to 10, 6s. 6d. per quarter. Technical Preparatory for the Honors Grade for the City and Guilds of London Institute Examination. Fee for session, 5s.

9 to 10.—Syllabus: Analysis of escapements, horizontal, duplex, lever, chronometer, gravity escapement, equations to curves of teeth, depths, simple pendulum, tautochronism of the pendulum arc, compound pendulum, conical pendulum, parabolic pendulum, compensation, timing, annular balance, isochronism, timing and adjusting, temperature errors, Hartnup's formulæ, solar and sidereal observations, meridians, sundials.

Students for the Honors Class are specially recommended to join the Advanced Class in the Theoretical Mechanics, and also in Mathematics. In this grade the following prizes are offered: £3 and silver medal, and bronze medals.

THEORETICAL MECHANICS.

8 to 9; Advanced (1st Division or Solids).

APPLIED MECHANICS.

Elementary, 7 till 8. Advanced, 9 till 10.

Thursday.—Drawing Class for Watch and Clock Making, from 8 to 9.45. Fee for the session, 5s.

Syllabus: Elementary exercises in plane and practical geometry, cycloid, epicycloid and hypocycloid, parabola, evolute of parabola and its application to the parabolic pendulum, involute curve, epicycloidal and involute curved teeth, forms of pinion leaves, depths, plans of various escapements, calibres, striking, chime, repeating and keyless motions, plans and elevations, isometric projections, back-lining and shading, coloring.

Friday.—Practical Instruction in Escapement Making and Adjustments, Springing and Timing, and Superior Jobbing Work, 6 to 10. Fee, 10s. 6d.

Syllabus: Applying flat, brequet, and cylindrical springs, adjusting for temperature isochronism and positions, corrections for escapement errors, taking time by transit observations, etc.

To meet the requirements of students who are unable to attend the evening classes, the committee is prepared to make arrangements for attendance at the day classes for such periods as may suit their special conveniences.

Practical instruction is given daily from 10 to 5; Drawing on Friday from 2 to 5, and in Theory on Thursday from 3 to 5.

The educational programme of the Polytechnic affords ample opportunity for students to obtain a full certificate in one session.

Special prizes are awarded at the examinations held each year, and Free Studentships for the ensuing session at any of the Science Classes is awarded to those students who pass successfully in two science subjects, provided that in one instance at least a first-class pass is obtained.

The Governing Body of the Polytechnic also offer a special prize to the value of 21s. to all students who make at least twenty attendances and pass successfully in one technical and two science subjects.

Special prizes are also offered by the committee for competition in each of the classes to those who have made at least twenty attendances and sit at the departmental examinations.

GOLDSMITHS' WORK AND THE MANUFACTURE OF PERSONAL ORNAMENTS.

On Friday Evenings, from 8.30 till 9.30.

The instruction afforded will embrace the following:—

The principles and methods of manufacturing the various kinds and styles of personal jewelry; the exhibition and description of the tools generally used; the simpler gold alloys and their solders, together with the various methods adopted in finishing gold work.

Special lectures will also be given, dealing with the subjects of Chasing, Engraving, and Enamelling.

The Course will also include other information likely to be of special advantage to all engaged in the various branches of the trade.

Only those engaged in the watch and clock making and goldsmith or jewelry trades will be eligible to attend the Technical class.

Special classes are also held for Designing and Chasing as applied to goldsmiths and jewelers' work.

Time table of classes of over 200 subjects can be had free on application.

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[*] For the collective interest of the class it is necessary that each student provides small tools.

[†] The classes in Elementary Practical Work are especially suitable for those who are going abroad, or residing at great distances from manufacturing centres, as they have an opportunity of fundamental exercise in practical work of every description.

* * *

A CONTEMPORARY describing the manufacture of a magnificent microscope with a magnifying power of 11,000 diameters, lately made for the Chicago Exhibition, states that the light used for the illumination is equal to 11,000 c.p. They do not say where the eye is going to be manufactured to stand such a light.

Our Unwrought Materials.

THE FUTURE OF ALUMINUM.

The facts recently brought forward by the chairman of the Aluminum Company at its fourth annual ordinary general meeting, are interesting from many points of view. They show that however well a nest may appear feathered it is advisable not to put all one's eggs into it. He observed that when the company was formed, only four years ago, the price of aluminum was from 60s. to 70s. per lb.; they were then able to produce it at 20s. per lb. with a handsome profit. But soon after this, electrical processes were patented by others, which so reduced the price that at the previous meeting of the company it stood at 6s. or 8s. But only in the short time of one year it had fallen down to 2s. per lb.; this is lower than we have ever seen it quoted in this country. Several American firms advertise it at a dollar a pound, and we have seen prospectuses and companies which set forth they can make it for 6d. Should this ever be realised, and a cheap and easy method of obtaining it from ordinary aluminous clays be invented, there is no predicting the influence it would have on modern civilisation.

GOLD IN WESTERN AUSTRALIA.

With regard to the news of fresh discoveries of gold in the North-West of Western Australia, which we have previously announced, an old digger named Douglas says he has discovered three reefs on the Upper Murchison, and shows a number of rich quartz specimens, and a small quantity of alluvial gold, including a two-ounce nugget and several ranging up to one ounce. One of the quartz specimens weighs nine ounces, and contains fully fifty per cent. of gold. He, however, gives a dismal story as to the state of affairs and the country; food and water being unobtainable.

NEW DISCOVERIES OF QUICKSILVER.

The Persian Bank Mining Rights Corporation have received information from their engineer that he has discovered a vein of quicksilver, upon which he is now engaged in preparing a full report. It is also said that in constructing the new Doner railway line, the Russian engineers have struck a valuable deposit of the same metal.

ORIGIN OF GOLD NUGGETS.

Large gold nuggets are still reported from Western Australia in alluvial deposits reaching three figures. It is very significant that all large gold nuggets have been found in alluvial deposits which in great part originate by the destruction of quartz reefs, which may or may not contain gold; and yet we never heard of anything like a nugget being found in quartz. The probability, therefore, is that nuggets are segregations, or aggregations of gold, deposited from the waters percolating these strata; but when one remembers that the only waters that could possibly reach many of these patches of gravel, since they were left by the rivers in which they were deposited, are of meteoric origin, it appears necessary that those waters should have taken up the gold in solution from the upper part of the beds to be able thus to redeposit it.

A NEW LARGE RUBY.

We hear that a large ruby of 304 carats is on its way to London from the Burma mines. As we hear nothing about its quality we fear it belongs to the same grade as those recently sold by Messrs. Christie and Manson. But after all, what gambling this ruby-mining is! What a sell it would be to many of a pessimistic turn of mind if a really large ruby of fine quality were found, say of a hundred carats! And yet there is nothing *a priori* why this should not happen, except, perhaps, that probabilities based upon past experiences do not lead us to look favorably in that direction. About eight or nine years ago a merchant brought over from India, with the object of selling it, a large sword handle about five inches long and two inches wide, cut out of a solid ruby—one hardly liked to call it corundum, as it was ruby-red, but at the same time it was only adamantine spar, or crystalline corundum. No one in this country cared for it, and so it had to be returned to its native land, where it will doubtless be catalogued among the treasures of the Orient, say as a diamond sword with a ruby handle five inches long (which may be increased in proportion to the miles the account travels); and some biographer, historian, or literary pastepot will try and work out its value from Jeffrey's tables, and present a row of figures going across the page. We have known a similar thing to occur before now, and see the figures quoted by trade journals who ought to know better (*e.g.*, the Braganza).

THE RANDT OUTPUT RISING.

The crushings at the Randt Mines for August yielded 59,070oz., which is 2,608oz. higher than in any previous month. The output for April last, 56,362oz., being the next highest figure.

*

More Caskets.

AT the recent opening of the Arts and Crafts Loan Exhibition at Kendal by the Princess Louise Marchioness of Lorne, her Royal Highness was presented with a silver casket containing an address. The casket was designed and executed by Mr. Dimsdale Carlisle, 29, Market Place, Kendal. It is a very substantial, solid, and effective piece of work, and has so inspired Her Royal Highness that she has since written to the mayor expressing her admiration of the beauty and workmanship of it. Well done, Mr. Carlisle!

THE casket which is to contain the freedom of the City of Newcastle, to be presented to Mr. Gladstone, has been entrusted to Mr. R. H. Burton, goldsmith, Cloth Market, Newcastle. The body of the casket will be of ebony, richly ornamented with 18-carat gold. It will be oblong in form, and the general design and decoration of the Renaissance period. On the front will be a centre medallion of gold, on which will be enamelled the portrait of the right hon. gentleman, surrounded by a wreath of laurel and oak; and below this will be placed the city arms in true heraldic colors. On either side will be an elegant panel with gold scrolled shield, one bearing the view of St. Nicholas' Cathedral, and the other the old Castle. On the reverse side of the casket, enamelled in gold, will be a view of the High Level and Swing Bridges, and below this the arms and crest of Mr. Gladstone. At the four corners there will be a gold ornamental and garlanded pillar. On each end is to be an ornamental gold panel, and in these will be represented the rise and progress of the locomotive and railway system, Stephenson's engine "Billy" being shown on one end, and the modern express engine on the other. The lid of the casket will bear on the front a gold inscription plate, and on the reverse side will be shown an Armstrong gun. The four shoulders of the lid will be richly decorated with gold scrolls, etc., and the ends will bear symbolical ornamentations; and forming the apex will be the city crest, giving the lid a graceful finish.

*

Silk and metallic diamond mounted fobs are in good demand. Platinum and gold jeweled fobs and bracelets are also selling.

Transatlantic Jottings.

BROADLY speaking, prospects all round on the other side of the Atlantic are of the most cheerful and satisfactory nature. In most places there are heavier grain crops than for very many years, whilst the amount of available money in active circulation is a hundred million dollars more than it was at the middle of the crop moving season of 1889. Many trade journals affirm that it may be said that never before has trade been so brisk. Everything points to a phenomenal fall business.

* * *

EVERYTHING is now being pushed forward in earnest in Chicago. Spaces are being selected, or are already taken, by the large manufacturers connected with our trades, and everything points to the exhibition being an unprecedented one so far as the United States is concerned. In the city itself alterations are being effected, and new regulations enforced with a view of removing all obstructions to an overflowing host of visitors. One of the first things to be removed has been all clocks and suchlike things from side-walks, which will henceforth be elevated a storey or two.

* * *

THAT the American Government now intend doing all they can to popularise the exhibition and remove all obstacles is further evident from a circular which has been issued to the Diplomatic and Consular Officers of the United States, and which states that—

"The Attorney-General has tendered an opinion that skilled employés of foreign exhibitors at the Chicago Exposition, who come, in good faith, for the purpose of setting up and operating the machinery of such exhibitors, are outside of, and not subject to, the contract labour laws of the United States. The same opinion is expressed with reference to clerks, stall-keepers, and other persons coming to the United States for the sole purpose of aiding foreign exhibitors."

* * *

PEARL-HUNTING still continues a fever. Several rivers in Illinois have been attacked. At Grand Rapids, Wis., a farmer claims to have found several hundred pearls, which has driven many off their heads. The same state exists near Council Bluffs, Ia. A party at work in the Cedar River took out 150,000 unios in three weeks, for which wholesale destruction they were rewarded with 400dols. worth of pearls. One found in the Mackinnon has been valued at 500dols.

* * *

A WATCH factory is to be built at Oak Creek, near Milwaukee, Wis., by a company with 200,000dols.

The Trenton Watch Company have just increased their capital by 200,000dols., most of which has been taken by the directors and old shareholders. Longstanding orders will probably now be wiped off in time.

The United States Company are about to put a new 18-size open-face full-plate watch upon the market.

The San José (Cal.) Company are already in trouble over their land, which, the owner claims, was never legally conveyed.

Granby, Conn., is also to have a clock factory.

The Elgin watchmakers are trying to form a national watchmakers' union.

So great is the popularity of the Tancuil (Mass.) Watch Tool Company that it has recently doubled its capacity.

A watch was recently brought back to repair—one of the old Nashua Watch Company's—which could look round the factory and enjoy the pleasure of knowing that since it was turned out of doors five million one hundred thousand younger brethren had shared a similar fate.

The Illinois Watch Company have put up a machine for making watch dials.

A Standard of Time for the World.

AT the weekly meeting of the Balloon Society of Great Britain, held at St. James' Hall, London, on September 11th, a paper entitled "A Standard of Time for the World" was read by Mr. W. H. Le Fevre, C.E., President of the Society. The lecturer said:—

"Having been requested to address you this evening, I may perhaps call your attention to the papers previously read before the members by one of our vice-presidents, Mr. Kendal, of the firm of Kendal and Dent; and also to the prize of 100 guineas given by him to the author of the best essay on the 24-o'clock system. The title of Mr. Kendal's paper, which was read at our first meeting this year, was, 'Time, and the Prime Meridian Conference at Rome'; when the following resolution was adopted:—'That, in the opinion of this meeting, it would be unwise and inexpedient to disturb the prime meridian of Greenwich, as already agreed by a majority of the members of the conferences at Rome, 1883, and Washington, 1884. And further, that Her Majesty's Government be requested to use all legitimate means in their power to prevent, at the approaching conference at Rome, Jerusalem being fixed upon as the prime meridian of the world—a place without an observatory, and at present only accessible by an open roadstead at Jaffa, and with no railway communication to the spot.' That resolution was in due course forwarded to the Foreign Office, and, by means of the Press, public attention was called to the subject; and I may venture to think that this society was instrumental in preventing the conference being held at Rome. The title of my paper to-night is 'A Standard of Time for the World.' I purpose dealing with the subject generally, and lead up to what everyone must desire, viz., A Universal Time. I assume, after the conference at Rome, 1883, at Washington, 1884, and the Berne conference, this year, that no one will willingly attempt to disturb the prime meridian of Greenwich. I am glad to say that there is a movement now going on for reckoning time on a scientific basis, by which the greatest possible degree of simplicity, accuracy, and uniformity will be obtainable in all countries throughout the world. The reckoning of time is still in a primitive and imperfect condition in many countries. The introduction of rapid means of communication prove that time is computed generally on principles which are untenable. During the last eight years efforts have been made to overcome the evils by establishing a system on a sound scientific basis which would be acceptable to all nations, and by which perfect accuracy, uniformity, and simplicity would everywhere be obtainable. The subject has been considered by many individuals, and by scientific societies, including congresses at Venice, Rome, and Washington. The latter embraced delegates from twenty-five nations. After patient deliberation and discussion, the object of this International Conference was accomplished by the passing of a series of resolutions for the adoption of a universal system of reckoning time. The important results of the conference were the establishment (1) of a prime meridian for reckoning longitude; (2) a zero for time reckoning; and (3) a unit measure of time to be common to the whole world. (1.) The prime meridian to correspond with the Greenwich meridian. (2.) The zero of time may be defined as the moment of mean solar passage on the anti-prime meridian. (3.) The unit measure of time, designated the universal day, may be defined as the interval between two successive mean solar passages on the anti-prime meridian. (4.) The universal day shall be counted in a single series from zero to 24. Considerable progress has been made in the adoption of the principles of universal time, and the practical success which has attended the application of those principles goes to show that the unification of reckoning by the several nations can best be effected step by step. At present, real and mean time agree about the 15th of April, the 14th of June, the 31st of August, and the 25th of December. The greatest differences are about the 23rd of October, when the clock is said to be 16 minutes slow of the sun; and about the 30th of January, when it is said to be 14 minutes fast of the sun. The Greenwich mean solar day then is really the mean of all the solar days in the year; and the equation of time is the amount to be added to or subtracted from the true solar time, in order to convert it into mean time. Sundials of course show true solar time. The lunar year, comprehending 12 moons, or 354 days, 8 hours, 48 minutes, was the regulation of time among the Chaldeans, Persians, and Jews. The solar or astronomical year is different; the earth performing its revolution round the sun in 365 days, 5 hours, 48 minutes, 49·7 seconds. No account was taken of the odd hours till the year 45 B.C., when this error in the computation of the year had become very considerable. The surplus 5 hours, 48 minutes, 49·7 seconds was taken as 6 hours, making one day in 4 years. This day was therefore added to every fourth year. There still remained the apparently trifling difference of 11 minutes, 11 seconds, between the computed and the real year, thus producing an error of about 7 days in 900 years. To adjust the calendar, a new one was published by Pope Gregory XIII. in 1582, omitting 10 days (the 5th October becoming 15th October), which represented the accumulated error; and it was decided that three leap years should be omitted every 400 years. Thus, as 1600 was leap year, the years 1700, 1800, and 1900 are not, but 2000 will be leap year. The new style was not adopted in Great Britain till 1752, when eleven days were jumped, the 3rd September being reckoned 14th September. As our year still exceeds the true year, although by an extremely small fraction, another leap year in addition to those should be omitted once in 4,000 years. The daily movement of the earth takes place in 24 hours of mean time, or 86,400 seconds; and the daily rate of a chronometer would be accurately represented by this number if it were exactly to mean time; but that could never be the case, except momentarily; the timing always leaves a slight difference, which may be either a gain, (+), or a loss, (—), and we therefore have a daily rate = 86,400 ± a fraction of a second, and if we assume there be a gain of 0·2 seconds, we have — daily rate = 86,400 + 0·2 seconds, or supply + 0·2.

"Reckoning by Hour Meridians. The first important step is the adoption of the hour zone system, commonly designated in America 'Standard Time.' It may be stated that in the theory of universal time, the fundamental principle is *Unity*, it is held that there is not more than one time in the whole universe; and that the idea of separate and distinct times in each separate locality is incorrect. The hour zone system is introduced as an easy means of transition from old to new ideas, and it is found that by adopting hour meridians as local standards for reckoning, grave difficulties are overcome. The hour zone system also furnishes the means of applying the correct principles of universal time in ordinary affairs. In the hour zone system the circumference of the globe is divided into twenty-four sections or zones. The central line of each zone is an hour meridian; and the hour meridians are fifteen degrees of longitude apart. As the earth rotates on its axis in twenty-four hours, an hour elapses between the solar passage on each successive hour meridian; it is obvious, therefore, that if the reckoning in each zone be governed by its respective meridian, the reckonings everywhere will be directly related, and throughout the globe there will be complete identity in the minutes and seconds. As the reckoning in the zone of the twelfth-hour meridian corresponds with universal time, the reckonings in all zones to the east of that meridian will be one or more full hours in advance of universal time; and in all zones to the west of the twelfth-hour meridian, the reckonings will be behind universal time. 'Universal Time' will be the mean of all possible reckonings under the hour zone system; and the 'Universal Day' will be the mean of all possible local days. The hour zone system has been adopted for ordinary use in portions of the three continents of Asia, Europe, and America. In 1887 an Imperial Ordinance was promulgated directing that on and after 1st January in the year following, time throughout the Japanese Empire would be reckoned by the third-hour meridian. The reckoning in England and Scotland is by the twelfth-hour meridian; in Sweden by the eleventh-hour meridian; and, quite recently, Austria-Hungary has resolved to be governed by the same meridian. Efforts are now being made to follow the same course in Germany, and in other European countries. In North America the hour zone system has been in general use for six years. In Japan, Central Europe, Great Britain, United States, Canada, and Mexico, identity of reckoning prevails, and in all these countries the hours are struck at the same moment; the only difference is in the numbers by which they are locally known.

"Twenty-four Hour Notation.—The second important step in regulating the reckoning of time throughout the world is to abandon the division of the day into anti-meridian and post-meridian hours, separately numbered, and to substitute a single series of hours numbered from 0 to 24. This change was resolved upon by the Washington Conference with respect to the universal day. The old practice of dividing the day into two sets of twelve hours has not only no advantage to recommend it, but it has been found to have positive disadvantages, which have been brought to prominence within the past generation. The division of the day into halves doubles the chance of error. The mis-print or mistake of a single letter a.m. for p.m., or *vice versâ*, will easily cause inconvenience, loss of time, possibly loss of property, or loss of life. The twenty-four hour notation removes all doubt and uncertainty, and promotes safety. Where it has been adopted in Canada there is no ambiguity; moreover, the change has been effected without difficulty and without danger. The hours denoted by a lower number than twelve are known to belong absolutely to the first part of the day, and those by a higher number to the afternoon and evening. The twenty-four hour notation is strongly recommended by prominent men in Russia, Germany, Italy, Austria, Belgium, France, Spain, Great Britain; and indeed, it may be said, in every country in Europe. It is brought into daily use on the great telegraph lines leading from England to Egypt, India, China, Australia, and South Africa. It is received with very great favor in America. It has been in use for nearly four years on 2,354 miles of the Canadian Pacific Railway; and for nearly three years on the Canadian Government Railway, 986 miles in length. The managers and employees speak of the twenty-four hour notation in the highest terms of approval. It is the only system in use at this date north of the forty-ninth parallel, and west of the eighty-ninth meridian. There is not a province in Canada where it is not already in use. It has been adopted on the railways in Nova Scotia, New Brunswick, Prince Edward Island, Manitoba, Assiniboia, Alberta, British Columbia, and partly in Quebec and Ontario. So satisfactory are the results of this new notation that it has been determined to extend its application, and it is expected that before long it will be in general use for railway purposes throughout the Dominion. It has likewise been introduced in the railway service of China, and it is not a little remarkable that one of the oldest Eastern civilisations should, conjointly with the youngest Western civilisation, set an example in breaking through the trammels of custom to inaugurate a reform which every intelligent person believes to be desirable. There is but one step necessary to secure to Great Britain all the advantages of Universal Time, and that is the adoption of the twenty-four hour notation. This one reform concerns the railway system and railway travellers especially; and, in a country where all persons travel more or less, I cannot but think that if English railway managers were informed as to the ease with which the change has been introduced in Canada, and the satisfactory results which have followed, they would speedily take steps to obtain similar advantages. The letters received by the Science and Art Department at South Kensington show that the resolutions of the Washington Conference are cordially favored by the following important bodies and departments, viz.:—1, Royal Astronomical Society; 2, Royal Society; 3, The Board of Trade; 4, The General Post Office; 5, The Eastern Telegraph Company; 6, The Eastern Extension Telegraph Company; 7, The Eastern and South African Telegraph Company; 8, The Society of Telegraph Engineers; 9, The Trinity House; 10, The India Office; 11, The Colonial Office; 12, The Admiralty. To these may be added the Committee of Council on Education, and the Board of Visitors of the Royal Observatory, Greenwich. As the fundamental objects of the Washington Conference were to remove all doubt and ambiguity in time-reckoning, to prevent discrepancies, to secure simplicity and introduce uniformity, it is manifestly important that the changes proposed, supported at the Conference as they were by the representatives of twenty-five nations, and subsequently looked upon in so many quarters as in themselves intrinsically desirable, should, without unnecessary delay, be accepted, and as far as practicable put in force generally. The first important step is the selection of hour meridians, and the adoption of the hour zone system."

(To be continued.)

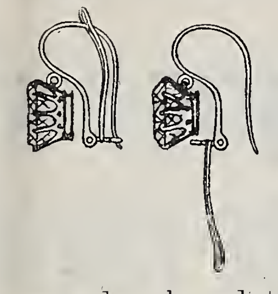
Obituary.

With the name of John Wycherley—a sound so familiar to many of our ears—we lose the first man who introduced the interchangeable movement, and many other important improvements which have added greatly to the superiority of English work during the last thirty years. Mr. Wycherley was a native of Prescot, where he was apprenticed, his first master being Mr. Geo. Hewitt, and his last partner Mr. T. P. Hewitt, who succeeded him when he retired in 1884. He died on the evening of the 5th ult., in his 75th year, at his residence in Chamber Road, Southport, deeply mourned by a large circle of friends; for although not a man to court publicity, he was nevertheless a member of the School Board from its inception, and for forty years an able Methodist lay preacher, class-leader, and Sunday School superintendent. Prescot churchyard, on the 10th ult., in the presence of a large gathering of friends, thus "received all that was mortal" of the original founder of the Lancashire Watch Company.

A CAUTION.

We have received the following from Mr. J. D. Benson, 10, Hylton Street, Birmingham:—"A short time ago a Mr. H. Billings, watchmaker, hailing from Tunbridge Wells, and late of Sandown, Isle of Wight, purchased some goods from me, sending, in payment thereof, a postal order made payable to a third party. Finding the order not endorsed, I immediately returned it to him for a proper endorsement. Since then, sad to relate, I have not had the paper returned nor heard from Mr. Billings. I may add that the man has disappeared from 'the Pantiles town,' and although I have spent time and money he cannot be found."

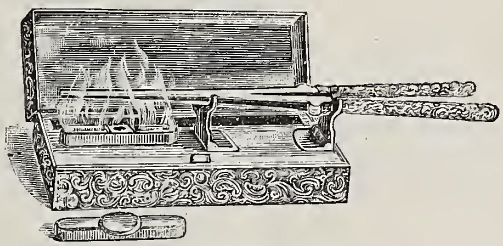
Things New and Noteworthy.



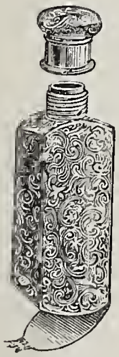
The above is an illustration of a clever device for keeping diamond earrings in position, recently brought out by an American firm, and for which a patent has been applied. One figure shows the arrangement open, the other when it is in the ear and shut; it is not only a perfect lock, but is easily manipulated, leaves plenty of room for passage through the ear, and can be made to hold the earring in any position required. This is a great improvement on the "American hooks and catches."

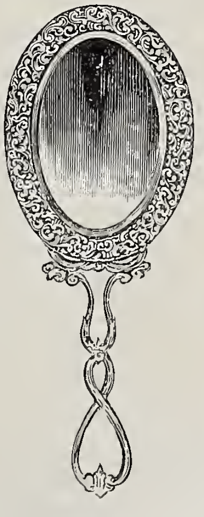
Messrs. King and Sons, 222 and 224, Goswell Road, London, have now on view at their show-rooms a complete series of their novelties for the Christmas trade in Hall-marked silver and untarnishable plate. Buyers before placing their orders would do well to inspect the artistic and novel designs for which this firm is celebrated. We give illustrations of three or four of their novelties.

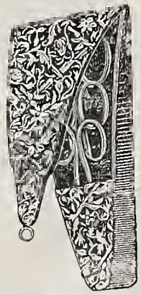
One of the necessities for ladies travelling at the present time is a convenient curling-lamp and tongs. Our illustration shows a very compact and useful design made both in silver and electro-plate, it being a shut-up box containing spirit-reservoir, lamp, and tongs complete. They are also made of a smaller size without tongs.



Another of the useful novelties we saw was a case for the ordinary Eau-de-Cologne bottle, made in plated, and leather with silver or plated mounts. The following block will convey a better idea of the design than any description.







We also give an illustration of one of the many patterns of hand-mirrors they make both in silver and plated; also a case of fancy leather, with plated mounts, containing three pairs of scissors, which forms a very useful present for a lady.

This firm have just issued a new illustrated catalogue, which they will be glad to send to the trade.

The Lists of Applications for Shares will open on Tuesday, the 29th day of September, 1891, and will close on Tuesday, the 6th day of October, 1891.

THE GOLDSMITHS' & GENERAL BURGLARY INSURANCE ASSOCIATION, LIMITED.

Incorporated under the Companies' Acts, 1862-1890, whereby the liability of the Shareholders is limited to the amount unpaid upon their Shares.

REGISTERED CAPITAL - - £250,000

In 49,800 Shares of £5 each, and 40 Deferred Shares of £25 each.

First Issue of £101,000, consisting of 40 Deferred Shares of £25 each, which have been subscribed for and paid in full, and 20,000 Ordinary Shares of £5 each, now offered for subscription and payable as follows:

5s. on Application; 5s. on Allotment; 5s. in Two Months; and 5s. in Four Months thereafter.
No further call is anticipated.

The Deferred Shares do not rank for dividend until a dividend of £8 per cent. per annum has been paid to the ordinary shareholders, after which the profits will be divided, one half between the Ordinary Shareholders and the other half between the Deferred Shareholders.

PROVISIONAL DIRECTORS.

HERBERT ATTENBOROUGH, Esq., Hillside, Crystal Palace Park Road, Upper Sydenham, S.E.
B. BARNETT, Esq., 319, High Holborn; and Carr Lane, Hull,—Goldsmith, Pawnbroker, and Fine Art Dealer.
Capt. V. LOVETT CAMERON, R.N., C.B., D.C.L., 41, Ashley Gardens, Victoria, S.W.
SAML. CHATWOOD, Esq., Lancashire Safe and Lock Works, Bolton; and 76, Newgate Street, E.C., Managing Director, Chatwood's Patent Safe and Lock Co., Ltd.
THOS. LAYMAN, Esq., 271 and 273, Borough, S.E., Hon. Sec., Metropolitan Pawnbrokers' Protection Society.
FREDK. WM. RUSTON, Esq. (Jackson, Ruston and Keeson), Eagle Court, Dean Street, High Holborn.

(With power to add two to their number.)

BANKERS.

LONDON AND COUNTY BANKING COMPANY, Ltd., 21, Lombard Street, E.C., and Branches.

SOLICITOR.

JOHN ATTENBOROUGH, Esq., 16, Ely Place, E.C.

AUDITORS.

Messrs. SEEAR, HASLUCK and CO., 17, Holborn Viaduct.

GENERAL MANAGER & SECRETARY *(pro tem.)*.

J. M. BUCHANAN, Late Chief Superintendent, Mercantile Accident and Guarantee Insurance Co.

OFFICES.

85, Gresham Street, Guildhall, London, E.C.

THE GOLDSMITHS' & GENERAL BURGLARY INSURANCE ASSOCIATION, Limited.

PROSPECTUS.

This Company is formed for the purpose of Insuring, primarily, the members of the Jewellery, Pawnbroking, and kindred Trades, as well as ordinary Business Establishments and the Public generally against losses by Burglary and Housebreaking.

The necessity for some practical form of protection against the depredations of the thieving fraternity is now universally acknowledged, especially by the Members of the Jewellery and Pawnbroking Trades, and that such protection cannot better be obtained than by an Insurance Policy is amply evidenced by the large measure of support accorded to the two Companies already transacting this class of business, although high rates have been exacted, and vexatious conditions imposed.

This Company, the only one transacting Burglary Insurance alone, will conduct the business on broad and popular lines at equitable rates, and free from all unnecessary restrictions, the desire of the Directors being to make Burglary Insurance Policies as universally popular as those for Fire ; and when it is considered that not less than Seventeen Millions Sterling is paid yearly in the United Kingdom for Fire Insurance, while as yet, the total of the Burglary Insurance Premiums received by existing Companies is under twenty thousand pounds, it will be seen that the field for the Association's operations is practically unlimited.

While the Headquarters of the Company will be in London, its operations will cover the whole of the United Kingdom. It is not proposed for the present to open any Branch Offices, but an efficient staff of non-salaried agents, supervised direct from the Head Office, will be organised in all important centres. The Directors also propose to treat Shareholders who introduce business to the Company as Agents, and will allow them the usual Agency Commission.

It is well known that there is no more lucrative form of investment than Insurance shares, particularly of Companies such as this established for the benefit of certain trades, interests, or localities, (the average profits of 11 such offices during the past 6 years being 38 per cent. per annum). From the economical lines upon when this Company will be conducted, coupled with the moderate cost of incorporation, and the fact that no promotion money has been or will be paid, the Directors anticipate most satisfactory results. The profits cannot be accurately determined, but from careful calculations, based on the most reliable statistics, specially compiled to date, a steady ten per cent. dividend after the first year appears a moderate estimate.

The Directors have been fortunate in securing, as Manager, the services of Mr. J. M. Buchanan, late Chief Superintendent of the Mercantile Accident and Guarantee Insurance Company, a gentleman who has been actively and closely associated with Burglary Insurance since its first introduction, and who is thoroughly conversant with every detail connected therewith.

The Memorandum and Articles of Association can be seen at the offices of the Company's Solicitor, Mr. J. Attenborough, 16, Ely Place, Holborn Viaduct, E.C.

The ordinary shares are being offered in the first instance to the Members of the Jewellery and Pawnbroking Trades only, by whom it is expected they will be entirely taken up. The whole of the paid up capital, less the costs of incorporation, will be invested, consequently the risk undertaken by the Shareholders is very slight. Applications for shares should be made on the accompanying form, and forwarded, with deposit, to the Bankers or Secretary at the office of the Company, No. 85, Gresham Street, Guildhall, E.C., not later than the 6th of October, 1891, after which date the remaining shares (if any) will be offered to the Public.

It is intended to apply for a quotation on the Stock Exchange in due course.

John Harrison Once More.

WHILST admiring the horological exhibit at the "Navalries," I overheard a gentleman seeking information respecting John Harrison's Chronometer, which I gladly tendered; and getting into conversation I soon found another admirer of my hero. I therefore volunteered to give him all information I could respecting the "longitudinarian." The gentleman was the Vicar of Barrow-on-Humber, the scene, at least, of John's early boyhood, if not of his birth. Since his return back to his village he has published some interesting biographical items respecting Harrison and his family, which we are sure will interest our readers. We therefore have much pleasure in giving them *in extenso.* It must of course be borne in mind that they were written, not for a trade journal, but for a village magazine.

"Barrow cannot boast of having been the birthplace of any very remarkable man. Nevertheless our village has developed the genius of at least one, who though perhaps not born in Barrow, was brought up from very early years here, and who became famous in his generation and a benefactor of his kind.

Dr. Smiles, in a very interesting volume, *Men of Invention and Industry* (the book is in the Vicar's Room Library), gives a sketch of his life, which is well worthy the attention of especially young men. If we accept his chronology (which I think is doubtful) we learn that in the year 1700 there came to Barrow from the village of Foulby, in Yorkshire, a man named Henry Harrison, a joiner in the employ of Sir Rowland Wynne, of Nostel Priory, who at that time had property in this parish.

Henry brought with him a family of young children. Among these there was a boy named John, then, it is said, seven years old. It was this John, son of Henry Harrison, who afterwards became famous in the world. In all probability he was educated in the village school. What was the name of the schoolmaster, or what was the character of the education given, I am not able to say. Village schools two hundred years ago were not eminent for their proficiency, and I may safely say that every boy in Barrow has now a better and cheaper education than John Harrison.

But John made the best of what he had. No doubt he was a born mechanic, but there are abundant evidences of his extreme and untiring industry. From early childhood he was very fond of machines of all kinds. A watch was always a delight to him. Indeed he studied the mechanism of watches and clocks that he soon became the general watchmender of the village. He put our parish church clock in repair and good working order. He became one of the bellringers, and was famous as a tuner of church bells. Very probably our church bells are indebted for the tunefulness for which they are famed to the skill and industry of John Harrison. His repute was recognised in Hull, for the vicar and churchwardens of the parish church there employed him to put the bells, which are described as having been "harsh and disagreeable," into his hands; and he succeeded in making them "entirely melodious." When I was visiting in Masham, in Yorkshire, a little while ago, I was told that the bells of the church were inscribed "James Harrison, Bell Founder." This was the brother of John.

John Harrison was also a singer and a musician. He trained the parish choir, and brought it to a high state of perfection. He invented a curious monochord, which was remarkably accurate in its mechanism. Indeed he seems to have been the useful man of the village. Also in St. George's, Doncaster, there was a new set of chimes procured in 1755. The following copy of the receipt for the same has been sent me. "May 18th, 1755. Recd. then of Mr. John Beale, Thirtey-five Pounds fer makeing a new set of chimes. In full by me, Jas. Harrison."

But he was chiefly interested in clocks. He studied their mechanism and struck out new inventions for overcoming friction and other impediments in the way of exact timekeeping. He found that metals expand and contract in different temperatures, and that one metal expands more than another. This of course caused considerable inaccuracy in timekeeping, and he set himself to overcome it. Being a joiner he worked in wood, and being a villager he had to make his own tools, overcoming difficulties and battling bravely against obstacles which had baffled the skill of ages. He had many failures, but these only spurred him on to greater diligence. At the age of twenty-two he produced a clock, which was so accurately constructed that it is going, I believe, this very day.

Over the clock there is the following inscription.

Original Eight-day Clock.

"This clock was made at Barrow, Lincolnshire, in the year 1715, by John Harrison, celebrated as the maker of a Nautical Timepiece or Chronometer which gained the reward of £20,000 offered by the Board of Longitude, A.D. 1767."

"This clock strikes the hour, indicates the day of the month, and with one exception (the escapement) the wheels are entirely made of wood. Presented by Mr. C. Empringham, Brigg, Lincolnshire."

I had the pleasure of seeing this clock going, on the 29th September, 1887. I may mention that Mr. Bryan Cooper, our village antiquary, possesses a clock, which he bought at the sale of the furniture of the late Mr. George Marris, which is constructed entirely of wood, and is believed to be one of Mr. Harrison's clocks.

Mention is made in the inscription of a reward of £20,000. This was an immense prize, indeed it is the largest ever offered by any Government for any invention whatever. We may ask, what was the reason why so splendid a reward was given for a clock that would keep time accurately at sea as well as on land?

At that time this was quite impossible. In order to know this, the captain must find out the exact degrees of latitude and longitude of the spot on the ocean on which his vessel is at a particular moment.

The latitude, you understand, is the point North and South of the Equator. This could be ascertained by observations of the sun, and by instruments which had already been invented.

But the difficulty was with the longitude, *i.e.*, the point East or West of any meridian. Longitude, with us, is calculated from Greenwich, as you will see by a map. When the sun has reached its highest point above the horizon it is noon wherever we may be. The sun goes round the earth, as we say, in twenty-four hours; and as the distance round the earth is divided into 360 degrees, it is clear that the sun passes over fifteen degrees in every hour. If it is noon at Greenwich when the ship sails, she can tell how far she has sailed east or west at any time if she knows the exact time at Greenwich at that moment. The difference between Greenwich time and the ship's time is the ship's longitude.

They knew how to find out the ship's time in Harrison's day by observing the height of the sun, but they did not know how to ascertain what the time was at Greenwich at the same moment. In other words, they had no absolutely correct timekeeper. An error of one minute in the timekeeper would be an error of fifteen miles, or more accurately, fifteen-sixtieths of a degree, in their longitude. We can easily see that it was quite impossible to calculate the position of the ship within many miles. She might be upon well-known rocks when she was supposed to be in mid-ocean. This was a great hindrance to commerce, especially in the days when there were only sailing vessels, and it was the cause of great destruction of life.

(To be continued.)

Random Brieflets.

It is said in America that since M. Berthier has painted the portrait of the Prince of Wales, with a gold bracelet showing, the question is being brought forward as to whether men should, or should not, indulge in this practice. Many being of the former opinion are following the example set by the Royal brothers.

A Frenchman has recently made a very sensitive metallic thermometer, in which the expansion of two metals is indicated on a dial.

Her Majesty's Commissioners for the Exhibition of 1851 have offered nominations to Scholarships of the value of £150, tenable for two years, in subjects important to the industries of the country. When will our trade take advantage of this?

The fascinating and absorbing address of the President of the British Association cannot fail to have an influence upon some branches of our trades, and will make many anxious to possess telescopes who are not provided with one, or induce those who have such an instrument to take a step further, and add a spectroscope; whilst the magic art of photography will commend itself to many minds who previously had not thought of going in for it. It is thus highly probable that numerous instruments will be sold through the influence of this address.

It is by no means an uncommon thing for a jeweler to be sent to by some well-known person for a selection of jewelry on appro., all of which is returned the next morning, some of them bearing strong indications of much handling, having in fact been worn at a ball or party that has intervened. A case once came under our notice, where a family had often done this, and on the eve of an eventful ball sent again to the jeweler, who, judging what it was required for, sent a very fine necklace, which madam donned as usual for the occasion. Judge her surprise, as she was awaiting her turn in the dance, at hearing the well known voice of the jeweler uttering in suppressed tones beside her, "I am very glad, madam, you have decided upon that necklace, as it is the finest I had in stock." Needless to say madam never applied for jewelry on appro. again. A similar case is reported to us of an optician, to whom a local dignity applied for a large selection of reading glasses. Much to the astonishment of the optician, however, none were kept, although they had been evidently very much handled. The mystery, however, was solved a few days after, when a local paper reported a grand reception which had been held by the ought-to-have-been customer, pointing out the great kindness and forethought of the host in providing a large number of magnifying glasses for the use of visitors in viewing the *objects d'art*.

A jeweler on Rhode Island has an arrangement by which the opening of his door winds the clock, so that he says his clock "never wants winding."

The *Buffalo Express* says: "The inventor of the Waterbury watch has gone to eternity—the only place where there is time to wind a Waterbury watch."

The sales of old silver continue. A remarkable piece was put up recently at Christie's, in the form of an immense oval cistern, dated 1667, and weighing no less than 1,068oz. It realized over two guineas an ounce.

In Russia another series of experiments have been carried on by Prof. Mendeleeff upon the variation of the density of water at different temperatures, which go to show that calculations previously made were not so exact as they might have been. He says, "In the case of water we have begun to understand more clearly the influence of heat upon densities and volumes, and I believe that with the help of water we may expect some further progress in the study of the influence of heating upon matter."

The Opera Glass Supply Co., which is in operation in a dozen or so of the theatres, declared its first dividend at 6 per cent.

The export trade of the Black Forest industry to Great Britain during the year 1890 is described as having been extremely active, though some manufacturers concluded the year with stocks on hand even larger than usual. Cheap and inferior qualities seem to have been less in demand than formerly. With the development of the American system of manufacturing watches and clocks in the Black Forest, its industry is likely to become an increasingly strong competitor in the English markets.

Despite all efforts there appears to be something which prevents perfect compensation, even when recognised laws are rigidly adhered to. For a long time it has been felt that some of our most important data require verification. With this object in view Prof. Cornu and M. Baille have been making a series of experiments connected with the mean density of the earth. Their apparatus is fundamentally the same as was employed by Cavendish, but up to the present they have only succeeded in improving and rendering each part of the apparatus more sensitive and less liable to error, although they hope to be able soon to arrive at a definite result for the constant they are determining.

American jewelers are fully aware of the value of advertising, and lose no opportunity of employing it as a means of becoming known. The other day when a new jewelry store was opened in Akron, Ohio, tickets were issued to the visitors, and a lady's gold watch presented to the fortunate holder of Number 4,688. Another jeweler made himself widely known by sending up a balloon and dropping from it a ticket entitling the finder to a similar timepiece.

After occupying a leading position in Liverpool for more than a century, Messrs. Roskell and Co., the well-known watch manufacturers and jewelers, 21, Church Street, are retiring from business, and their premises have been acquired for other purposes.

The fascinating and absorbing address of the President of the British Association cannot fail to have an influence upon some branches of our trades, and will make many anxious to possess telescopes, who are not provided with one, or induce those who have such an instrument to take a step further, and add a spectroscope; whilst the magic art of photography will commend itself to many minds which previously had not thought of going in for it. It is thus highly probable that numerous instruments will be sold through the influence of this address. Many have already experienced this, from a whole edition of "Ball's Study of the Heavens," to small microscopes.

We regret that the premises of Mr. H. Crouch, 66, Barbican, were very seriously damaged by fire just as we were going to press with our last issue; no less than five engines were speedily on the spot, which kept the fire from rising to the upper part of the building. Mr. Crouch's great and invaluable improvements in microscopes are too well known by our readers to require a comment from us. We think we have seen everything that has been brought out up to the present, and have recently invested in one of his instruments for petrological research, which perhaps is the best kind of argument that can be adduced in their favor. The adjoining premises of Messrs. Orme and Co. were also damaged.

A list of goods likely to meet with a ready sale at the Chicago Exhibition has been compiled by a secretary to the British Legation, which includes porcelain (Minton, Derby, and Wedgwood), cut glass, cutlery, jewelry, gold and silver work, and fine art in metals.

Another subscriber would like to know from members of the trade what books they have found most useful in the optical branch of their business.

Goldsmiths and Jewelers' Institution.[*]

THE 129th half-yearly general meeting of the subscribers to the Goldsmiths' and Jewelers' Annuity and Asylum Institution was held on Thursday evening, August 27th, at the Horological Institute, Northampton Square, Mr. C. Robinson presiding. The report for the past half-year stated that the result of a theatrical benefit which took place at the Grand Theatre in February last was an addition to the funds of the institution of £33 13s. 11d. It would, the committee stated, be within the recollection of the subscribers that at the last half-yearly meeting a protest was made against the election of T. W. Bocock, upon the grounds that the committee had accepted as a candidate an unqualified person, inasmuch as he was over age when he commenced to contribute to the funds, but the committee resolved at the time to let his case be determined by the subscribers. He was elected and received his monthly instalments in due course, and the committee had now to state that at the special general meeting called to declare the election null and void, he was fully confirmed in his position as an annuitant. To prevent a recurrence of such a question, and to place beyond doubt what the committee conceived to be the duty of the institution towards the necessitous members of the trade, and to raise it to a higher ideal, an alteration of the rule bearing upon the matter was to be proposed. The statement of accounts showed that the sum of £10,287 9s. 1d. was invested in consols; the sum of £56 14s. 8½d. was due from the benefit account; and there was a balance in hand of £688 10s. 5d. On the motion of Mr. Bennett, seconded by Mr. Pannett, the report was adopted. The election of officers was then proceeded with. Major G. Lambert, F.S.A., was re-elected president; and Mr. H. T. Smith, manager of the Islington branch of the London and County Bank, treasurer. Mr. Dury moved an alteration in Rule v., increasing the age at which male candidates should be eligible for election by five years. He proposed that the rule should read thus: "That male candidates shall be eligible for annuity and asylum at fifty-five years of age; they must be of good character, and have subscribed to the funds for at least five years annually, or, if life subscribers, such life subscription must have been paid five years previous to application for the benefits of the institution." In moving the resolution, Mr. Dury said his object was to avoid, if possible, any misunderstanding as to the age at which male annuitants were eligible. In the interests of the institution he asked the meeting to assent to the amendment in the rules. Mr. Picard seconded the resolution. Mr. Barber thought that after the action of the members in electing Mr. Bocock as an annuitant, notwithstanding the fact of his being over the age, it was quite unnecessary to alter the rules. Dissatisfaction with the proposal was also expressed by several other gentlemen, who thought that such an alteration as that proposed would result in future candidates for the benefits being all old men who had subscribed but for a short time to the institution. The secretary (Mr. Innocent) said that previous elections had shown that the longest subscribers received the largest number of votes. On a show of hands, there were for the amendment, 54; against, 47. Amid a scene of considerable confusion a division was claimed and taken, with the result that the motion was declared to be lost by 72 to 62. Prior to the meeting there was an election of three annuitants and one asylum inmate.

Clock and Watchmakers' Asylum.

ON the same day as the above the annual dinner was given by the Clockmakers' Company, from the proceeds of a fund left by the late Mr. William Rowlands, a member of the Court of Assistants, to be expended in terms of the deed of gift for the benefit of the Clock and Watchmakers' Asylum. The chair was taken by Mr. Mullett, the Beadle of the company, and after an excellent repast, the Chairman proposed the usual loyal and patriotic toasts, which were duly honored.

The Chairman said he was glad to be again in the position that he had filled for something like eighteen years, and nothing gave him more pleasure than to meet so many old friends around him. He proposed "Success and Prosperity to the Clock and Watchmakers' Asylum," which was most heartily responded to by all present, each inmate having previously received the sum of £1.

Mr. Taylor (secretary) said that he felt the greatest pleasure in being amongst them again upon that occasion, for he thought that with only one exception it would make his eighteenth appearance amongst them on this anniversary of their late noble patron of the Clockmakers' Company (Mr. William Rowlands). While he was not yet devoid of hope, he had known the time when it was some difficulty to get applications for election to the asylum; but he regretted now to say that there were no less than seven applications from persons anxious to become inmates of this institution. He once more wished to impress upon the younger branches of the trade the necessity of becoming subscribers to the funds of the asylum, so that they might feel that, when the time did arrive, they had done something in the days of their youth to render themselves worthy candidates for admission. He proposed "the Health of the Chairman."

The Chairman said, in coming once more amongst them, for the eighteenth time, as their chairman and representative of the Clockmakers' Company, he could assure them that he felt as much pleasure in seeing them as the inmates did him, and he only wished that he could come amongst them a little oftener to disburse the gifts of the Clockmakers' Company. He regretted to state that several pensions of the Clockmakers' Company to freemen of the company, could not be disbursed to many applicants who had served their apprenticeship to freemen, but who had neglected to take up their freedom. He was certain that the Clockmakers' Company were always open to do what they could, and that in no instance was a case deserving of charity brought before them but it always received attention, and in most cases relief.

Other toasts followed. The evening's proceedings were interspersed with a number of songs, solos, piano-duets, etc., and the singing of "Auld Lang Syne" concluded the business.

Birmingham Assay Office.

THE Birmingham Assay Master, in his report for the year ended 30th June, 1891, makes the following returns:—

	1888.	1889.	1890.	1891.
Gold wares assayed and marked......Ounces	122,743	158,767	193,426	230,136
Gold wares assayed and broken .....Ounces	1,024	1,635	2,009	2,324
Silver wares assayed and marked ...Ounces	*e* 775,901	*e* 904,719	1,098,250	1,240,982
Silver wares assayed and broken ...Ounces	1,438	1,937	1,804	2,788
Number of gold and silver wares entered for assaying..................	3,347,974	4,292,325	5,631,188	6,183,045
Number of assays made	109,760	129,009	147,025	163,176
Amount of plate duty collected	£24,305	£30,574	*f* £29,278	

(*e*) January 1st, 1888, "The Merchandise Marks Act" came into force, occasioning a reduction of 88,122 ounces of foreign silver watch cases as compared with the corresponding half-year of 1887. In 1889 no foreign silver watch cases were entered, as against 193,857 ounces in the year ended June 30th, 1887.

(*f*) For ten months ending 30th April, when the duty was abolished by the Budget Act of 1890.

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[*] We regret that this and the following report were unavoidably left out from our last number. But, after all, we believe we are always more willing, and even anxious, to publish accounts of meetings of the various charities than the secretaries are to send us accounts, or even notifications of their meetings. We are in a position to say that there are very many members of the trade who would only be too glad to join the various institutions, if they knew of their existence. We can only say that had the respective secretaries been connected with the development and maintenance of the most popular concerns in the world they would have learned the fact that advertisement is the source from which new blood springs.

In and Out the Courts.

James Farrell Alexander has been committed for trial on the charge of obtaining jewelry to the value of £43 by false pretences from G. H. De la Cour, jeweler, Chatham, by representing himself as belonging to the firm of Messrs. Alexander Bros., 16, Hatton Garden.

William Scott, a waiter belonging to Penicuik, was recently engaged as a waiter for the evening at Dalhousie Castle, and after his departure sundry articles of jewelry were missing. He was traced to his lodgings in Penicuik, and upon him were found a diamond ring and a hairpin, part of the proceeds of the robbery. He was committed for trial.

William Cooper has been committed for trial on the charge of stealing jewelry to the value of £66 from the Science and Art Department, South Kensington. He was found in the museum about five o'clock one morning by a constable. A sharp encounter ensued. The prisoner broke through a window, and so got out of the building, but was ultimately captured by another constable.

Thomas Allen, a guard on the L. and N. W. Railway, through the instrumentality of a pawnbroker, has been apprehended and charged with stealing jewelry from brake vans of trains. For some months past the company has received complaints of losses of jewelry, and other properties, from trunks and portmanteaus conveyed in the guard's van of trains with which the prisoner travelled.

An incorrigible young rascal, well named Boniface, was recently brought up before Sir Andrew Lusk, charged with being in the illegal possession of three watches which had been stolen from a shop in King William Street. A police officer, to whom the face of Boniface was familiar, having seen him enter a jobbing jeweler's in St. Luke's, followed him in, and asked him if he had anything to sell. At this moment he held a large Waterbury in his hand, which he offered to the officer if he would let him go. When at the station two other watches were found upon him. As the young gentleman had only just been released from six months' imprisonment, it is only right that he should be prevented from following the course he has formerly pursued for a long time to come.

John Collings, watchmaker, Hove, was committed for trial for stealing four watches entrusted to him to repair.

At Dewsbury (West Riding) Police Court, William Henry Wilson, nineteen, was sent to prison with three months' hard labor for stealing two silver watches and two silver cases of the value of £5 15s. from his late employer, Calverly Westerman, Chapel Hill, Morley.

A clever capture was recently made in Adelaide, it appears, a boy having noticed two men digging at the foot of a tree on the east park lands, and planting something, gave information to the police, who, upon examination of the spot, found three tins which contained jewelry, etc., to the amount of £100, also a number of skeleton keys. The police took the property and put the tins back, setting a watch over the spot. Subsequently two men, Thomas Mathews and William Bartram, alias George Collins, were arrested while in the act of making off with the empty tins. The men resisted, but after a struggle they were secured and locked up. The jewelry proved to be some of the property stolen from the houses which have lately been robbed near the city.

Most people will be at a loss to understand the verdict obtained for Bryce Wright, for pawning £400 worth of jewelry, the property of Miss Lloyd, of Acton, and to which he pleaded guilty; being only bound over on his own recognizances for £10 to come up for judgment if called upon.

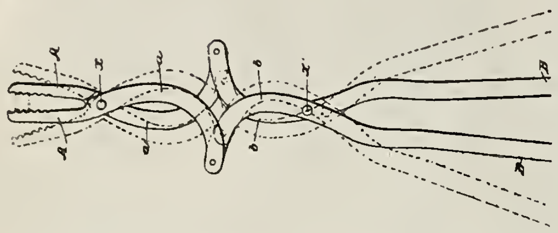
Albert Isaacs, twenty-six, of 87, Commercial Road, Stamford Street, Blackfriars, described as a carpenter, was charged before Mr. Alderman Cowan with stealing, from No. 13, Gresham Street, a gold albert chain, value £9 11s. 6d., by means of a trick. Mr. C. Sweetenburg said he traded with a partner as Langton and Co., 13, Gresham Street. At twenty to one o'clock on Monday afternoon the prisoner entered the shop and said he wished to see some gold chains. Witness showed him some. He held them up, and selected the best. He then laid a chain on the counter, and put down half-a-crown, stating that he would return in half-an-hour. Witness understood the 2s. 6d. was a deposit. When he took up the chain he at once discovered that it was light, and as the prisoner was nearing the door he called upon him to stop. He did not, but commenced running. Witness went after him, and saw him apprehended by Detective Roper. The chain produced was the property of his firm. The metal chain left by the prisoner was the same pattern as the one he selected, but was worthless. The Alderman: Any questions? Prisoner: No, sir; it is quite true what he says. Detective Roper asked that the prisoner might be remanded, as there were other cases of a similar nature against him. The Alderman remanded the accused for a week.

At the Central Criminal Court, on Sept. 18th, Julius Spilzer, twenty-seven, a diamond broker, was indicted for obtaining £3,500 worth of diamonds by false pretences from Mr. Lippman Krobell, a diamond broker, 24, Hatton Garden. Prosecutor stated that on July 20 prisoner, whom he had known for the last twelve months, called upon him, and said, "I have been commissioned by an Australian shipping house, Hoffnung and Co., to show them about 200 carats of diamond mêlée." He (prisoner) promised to bring the diamonds back at once if they were not sold. There were some other negotiations during the day, but the prisoner did not return with the diamonds, and in the evening he (prosecutor) went in search of him, finding him eventually at 32, Adolphus Road, Finsbury Park. Prisoner then said he had lost his pocket-book which contained the diamonds in the Tottenham Court Road. He said he was riding in an omnibus, but did not discover the loss until five o'clock. The prosecutor remained with prisoner all night in the hope of inducing him to tell him what had become of the diamonds, as he did not believe that he had lost them in the way he stated. A number of witnesses were called with the object of showing that the prisoner's story as to the loss of the diamonds was but a part of the conspiracy in which he had been engaged for the purpose of defrauding the prosecutor of his property. It appeared that the prisoner had obtained about £80 worth of diamonds the same day from a broker named John Ratzon, carrying on business in the Gray's Inn Road, and he stated that he lost these diamonds at the same time. The defence was that the prisoner lost the diamonds in the way stated. Several witnesses were called to prove that he reported the loss to the police at the Moor Lane Station, but in cross-examination the officer who took the information admitted that he doubted the story told him, and asked the prisoner why he had not gone to the nearest police-station instead of coming into the City. Prisoner replied, "I thought I might find them on the way." The prisoner's brother in cross-examination admitted that the Post Office authorities had refused to deliver a valuable parcel of diamonds obtained by a member of the family from abroad, and also that a warrant was out against a member of the family who was now in America for matters arising out of a diamond transaction. The Recorder having summed up the case the jury found the prisoner guilty. Mr. Besley applied that sentence might be postponed until next sessions to give the prisoner an opportunity of voluntarily restoring the property. Sentence was postponed.

At the Blackburn Borough Police Court, Charles Taylor 41, watchmaker, was sent to jail for three months for pawning watches and rings left with him to repair. At Bolton, a similar case was sent to trial.

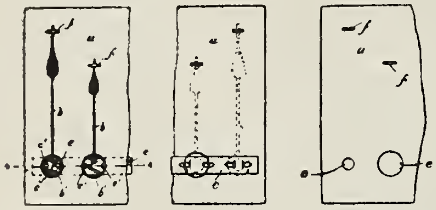
Illustrated Inventions Record.

Pliers.—Walter J. Monteith, Albany, Oregon.



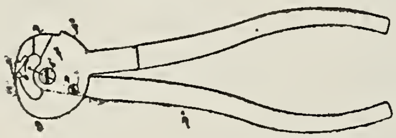
The improved pliers composed of pivoted jaw-levers having shanks which are curved inwardly in opposite directions and the pivoted lever-handles whose shorter arms are curved outward and oppositely and pivoted to the shanks of said jaw-levers, as shown and described, to operate as specified.

Device for Securing Watch Hands to Cards.—Nathan P. Mulloy, Waltham, Mass., assignor to the American Waltham Watch Company, same place.



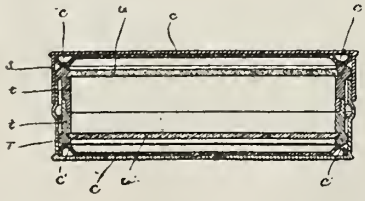
A card having a series of round holes and a series of watch hands having their annular shoulders fitted therein, in combination with a continuous metallic strip located on the back of the card and having a series of prongs extending through the card and bent over the hands.

Cutting Pliers.—Charles Boecker, New York, N. Y.



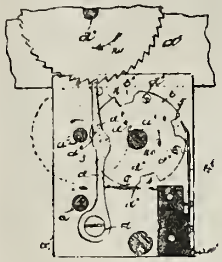
A pair of cut nippers having one part socketed through the other and adapted to be put together and separated by a longitudinal movement, in combination with each other and with a removable pivot, C, and a removable backing pin, D, engaged in a concentric groove, *b*, arranged for joint operation.

Watch Movement Box.—Harrie E. Duncan, Newtonville, Mass., assignor to the American Waltham Watch Company, of Massachusetts.



The combination, with a watch movement box, of a cover having on its inside an annular hollow ridge, said ridge forming a yielding shoulder adapted to bear upon the edge of the dial of a watch movement packed in said box.

Circuit-Closer for Clocks.—Henry A. Chase Boston, Mass.



In a circuit-controlling device for time mechanism consisting of two independent members, the combination, with one member, of the second member provided with a lug, a motor mechanism to move said second member, a locking device for said second member, provided with two detents out of line with each other, and an independent motor mechanism to operate said locking device to disengage one detent from the lug and engage the second detent with the lug and thereafter to disengage the second detent from the lug, substantially as and for the purpose specified.

APPLICATIONS FOR PATENTS.

Expressly compiled and contributed for this Journal by Messrs. W. P. Thompson and Co., FF.C.S., MM.I.M.E., Patent Agents, 6, Bank Street, Manchester; 6, Lord Street, Liverpool; and 323, High Holborn, London, W.C.

13,238.—A. J. Needham, H. C. Needham, and W. C. Needham, London, "Improvements in watches." Dated 5th August, 1891.

13,239.—A. J. Needham, H. C. Needham, and W. C. Needham, London, "Pocket watch stands, also combination watch stands." Dated 5th August, 1891.

13,845.—R. Bateman, Birmingham, "Improvements in the fastenings of scarf slides, earrings, solitaires, links, and other such articles." Dated 17th August, 1891.

13,129.—W. J. F. Gordon, Ontario, "Gravity door bell." Dated 4th August, 1891.

13,732.—O. Thost and H. Richter, London, "Improvements in musical boxes." Dated 14th August, 1891.

13,670.—The London Metallurgical Company, Ltd., and S. O. Cowper-Coles, London, "Improvements in coating or plating metals and metallic articles, applicable also for the manufacture of bullets." Dated 13th August, 1891.

13,979.—F. B. Baker, Birmingham, "Improvements in the manufacture of ink-pots, biscuit-boxes, cruets, jams, jellies, butters, and the like." Dated 19th August, 1891.

14,014.—W. B. Fotherham, London, "An Improvement in and connected with neckties, scarves, and the like." Dated 19th August, 1891.

14,166.—J. Bach, London, "Improvements in the construction of optical instruments." Dated 20th August, 1891.

14,259.—S. Reefler, Sheffield, "Mercurial compensation pendulum for clocks."

14,282.—A. Clarke, London, "Improvement in watch-keys."

14,459.—H. Cliff, Rochdale, "A combination watch-key calendar and pendant."

14,463.—T. Masters, Liverpool, "Improvements in watch and clock escapements."

14,672.—W. Mathews, and W. G. Bennett, Coventry, "thief-proof swivel bow for watches."

14,872.—W. C. Lowden, Newcastle-on-Tyne, "Improved dust-cover for watches."

14,943.—A. G. Purfield, Cleckheaton, "Improved watch protector."

A Rich Silver Vein.

News from Colorado states that a very rich silver vein has been struck in the Pomeroy Mountains, near Caribou, which promises to be of extraordinary value.

The gold crushings on the Witwatersrand for July amounted to 54,920.

We should advise our readers, who would like to know the truth about diamonds and gold in South Africa, not to take Lord Randolph Churchill's letters for more than they are worth.

Gazette.

Bankruptcy Record.

Bradley, Samuel, and Co. (Samuel Bradley), 23, Park Avenue, Handsworth, and 27, Frederick Street, Birmingham, Wholesale Jeweler. First meeting: Whitehall Chambers, 25, Colmore Row, Birmingham, Sept. 15. Public Examination: C.C., Birmingham, Oct. 2.

		£	s.	d.
David, J.	London	34	0	0
Little and Co.	,,	24	0	0
Thalmann and Co.	Bieme	29	0	0
Abrahall and Co.	Birmingham	55	0	0
Cox Bros.	,,	119	0	0
Cox, W. F.	,,	20	0	0
Glover, J. G.	,,	20	0	0
Griffin, John	,,	25	0	0
Parkes, A. E.	,,	62	0	0
Payton, F. W.	,,	19	0	0
Reading and Lee	,,	40	0	0
Cohen, P.	Coventry	21	0	0
Lindon and Co.	,,	15	0	0
Sown, R.	,,	22	0	0
Fully Secured Creditors	,,	70	0	0

White, Eliza, Egyptian House, 31, Terrace Road, Aberystwith, Lapidary and Jeweler.

		£	s.	d.
Wild and Co.	London	86	0	0
Aberystwith Gas Company	Aberystwith	13	0	0
Harries, T. D.	,,	10	0	0
Peake, R.	,,	12	0	0
Wemyss, W. H.	,,	54	0	0
Loneridge Bros.	Birmingham	50	0	0
Bevington, —	Hanley	10	0	0
Russell, T.	Haverfordwest	24	0	0
Ritter, —	Oberstein	157	0	0
Bankers' Claim		10	0	0
Preferential Creditor.				
Powell, —	West Bromwich	16	0	0

Young, George Herbert, 129, Somers Road, Southsea, Watchmaker and Jeweler. First meeting: Official Receiver's, Portsmouth, Sept. 14. Public Examination: Court House, Portsmouth, Sept. 16.

		£	s.	d.
Coope, H. J., and Co., Limited	London	42	1	0
Lawrence, Cohen, and Co.	,,	57	5	0
Laveredge, S., and Sons	,,	11	14	0
Potter, W., and Sons	,,	15	3	5
Unna, H. A.	,,	32	0	0
Bash, P., and Co.	Birmingham	13	1	9
West, J. B.	Portsea	16	10	0

Maurice, David, 2, Maxilla Gardens, Notting Hill, London, W., Jeweler.

		£	s.	d.
Maurice, R.	London	300	0	0
Weiner, S.	,,	33	0	0
Appleby and Co.	Birmingham	279	15	0
Cox, J. H. and S. J.	,,	318	9	5
Evans and Sons	,,	43	15	0
Goldsmid, M. J.	,,	55	3	4
Griffiths, H., and Sons	,,	148	1	10
Johnstone and Co.	,,	47	16	7
Nevill, Rd.	,,	174	9	0
Payton and Sons	,,	50	12	0
Pearce and Thompson	,,	43	12	3
Reading and Sons	,,	211	17	11
Tanday and Rudge	,,	62	2	0
Whitehouse, G. W.	,,	85	17	0
Walton, G. W., and Co.	,,	158	13	1
Bankers' Claims		32	13	0
Creditors under £30		282	9	10
Fully Secured Creditors.				
Saunderson, —	London	94	0	0
Newman, —	,,	55	10	0
Corsbie, —	,,	363	6	6
Waller, —	,,	196	10	0
Thomson, —	,,	599	5	0
Marchant, —	,,	12	0	0
Smith, G.	,,	32	0	0
Liabilities on Bills		81	12	2
(Not expected to rank.)				

Rosenberg, P. M., and Co., 17, 18, and 19, Manchester Road, Bradford, Jeweler.

		£	s.	d.
Lang, Jonas, and Co.	London	17	2	0
Perrier, M. A.	,,	27	4	9
Rosenberg, C. J.	,,	48	0	0
Rosenberg, E., and Co.	,,	22	7	8
Role, J.	,,	17	10	0
Ashford, H. W., and Co.	Birmingham	21	2	1
Oliver, W.	Merrington	500	0	0
Gregory, William, and Sons	Sheffield	15	0	0
Bankers' Claims		216	0	0
Creditors under £13		78	4	3

Clarke, Philip Wright (H. W. Clarke and Co.), 1, Lowther Road, Liverpool Road, Islington, and 103, Hatton Garden, London, E.C., Jeweler. Receiving Order: Sept. 7. Adjudication: Sept. 11.

Deeds of Arrangement.

Myers, Jacob, and Sons, 189, Warstone Lane, Birmingham, Jewelers' Factors. Partners: Juliana Myers, 277, Monument Road, Birmingham, and David Joshua Myers, 278, Monument Road, Birmingham. Trustee: Walter Best, 12, Northampton Street, Birmingham, Manufacturing Jeweler. Composition of 10s. in the £, payable by five equal instalments at 4, 6, 9, 12, and 15 months, from August 1st, 1891, the last instalment to be secured. Dated September 14th; filed September 15th; unsecured liabilities £3,865 12s, 8d.; net assets £2,281 14s.

		£	s.	d.
Robins and Appleton	London	317	1	0
Antrobus, A.	Birmingham	104	11	0
Ashford, H. W., and Co.	,,	101	13	6
Ashford, J., and Son	,,	103	8	6
Abrahall, M. J., and Co.	,,	14	0	0
Baker, E., and Son	,,	34	5	2
Bragg, C. B., and Co.	,,	30	9	6
Coley Brothers	,,	30	16	5
Carter and Pettifer	,,	24	8	7
Durban and Co.	,,	19	0	0
Freeman, J., and Son	,,	37	3	10
Hollis and Newman	,,	127	1	6
Hyde, H., and Son	,,	41	2	6
Hunt, —	,,	10	0	0
Johnston, G. H., and Co.	,,	41	7	1
Johnson, J. T.	,,	22	13	6
Knight, Joseph	,,	92	4	5
Loveridge, G., and Co.	,,	13	9	7
Levi and Solomon	,,	78	6	0
Levetus, E. M.	,,	32	1	3
Nock and Sanders	,,	20	3	10
Nathan Brothers	,,	16	15	2
Pearse and Thompson	,,	53	13	2
Payton, F. W.	,,	27	19	4
Paterson, W. E., and Co.	,,	27	0	2
Payton, C., and Sons	,,	171	3	7
Reading, J., and Sons	,,	75	2	4
Robins and McHewan	,,	44	11	0
Sanders Brothers and Greaves	,,	54	4	0
Spiers, D. and L.	,,	56	6	4
Swain, James	,,	18	8	1
Trevett, E. T., and Sons	,,	22	8	10
Thomason, J., and Nephews	,,	14	8	9
Thorneywork, W.	,,	30	18	7
Pale, W., and Sons	,,	20	18	0
Wheway, F.	,,	10	3	5
Wakefield, R. and J.	,,	142	19	3
Walton, G. and Co.	,,	25	13	0
Whitehouse, E.	,,	14	17	4

Myers, Mrs. David Joshua (Trustees) of	,,	450	0	0
Paterson, W. E., and Co.	,,	10	3	4
Myers, Joseph	Manchester	80	10	7
Bremer, A.		150	0	0
Devonport, W.		12	10	9
Smith, J., and Co.		11	8	7
Bankers' Claims		861	11	1

Wilkinson and Co., 30, Church Street, Blackpool, Jewelers. Partners: Henry Charles Wormall and Tattersall Wilkinson, both of 21, George Street, Blackpool. Composition of 5s. 3d. in the £, payable forthwith. Secured creditors, £139 15s. 9d. Dated September 3rd; filed September 4th; unsecured liabilities, £694 4s. 3d.; assets, £184 12s. 0d.

		£	s.	d.
Faudel, Phillips, and Sons	London	27	8	1
Bethell and Nicole	,,	40	5	0
Reynolds, E., and Co.	,,	25	17	8
Daltrey and Co.	,,	15	9	9
Max. Emmanuel	,,	24	14	0
Sanderson and Young	,,	25	14	0
Sharp and Green	Birmingham	31	0	4
Jones, Henry	,,	27	5	9
Green, G.	,,	10	13	2
Blakemore, H. H.	,,	17	19	0
Plant Brothers	Burslem	47	4	2
Richardson, Dr.	Blackpool	10	10	0
Whittaker, James	,,	10	18	8
Smith, J. L.	,,	138	10	0
French, R.	Glasgow	27	13	6
Barder, A.	Manchester	12	0	0
Wells, H. G.	,,	10	10	5
Rolez, J.	,,	29	7	0
Wright, L. J.	,,	15	14	6
Walton and Co.	Newton-le-Willows	43	6	10
Westall, Richardson	Sheffield	57	5	5
Gallimore, William, and Co.	,,	24	6	1
Smith, G.	,,	23	7	11
Batt, John	,,	26	19	0
Unsecured Liabilities		694	4	3
Estimated Net Assets		184	12	0
Secured Creditors		139	15	9

Dales, Charles, 5, Park Terrace, Westbourne, Bournemouth, Jeweler, Watchmaker and Optician. Composition of 9s. in the £, payable by four equal instalments, on September 26th, December 26th, 1891, March 26th, and June 26th, 1892, secured by a guarantor. Secured creditors £68. Dated September 3rd; filed September 9th; unsecured liabilities £1,284 2s. 10d.; net assets £660.

		£	s.	d.
Smith, J., and Sons	London	90	10	7
Williamson, Henry	,,	58	15	5
Houghton, George, and Son	,,	47	14	6
Lawrence, Cohen, and Co.	,,	36	12	6
Culver, George	,,	28	13	4
Marion and Co.	,,	23	14	4
Simmons and Fredericks	,,	12	13	3
Unna, H. A.	,,	11	2	6
Paterson and Cooper	,,	10	13	6
Round, Samuel	Birmingham	283	4	7
Powell, T. J.	Bournemouth	350	8	4
Taylor, George	,,	44	0	0
Mate, W., and Son	,,	21	1	0
Hicks, —	Broadstone	13	0	0
Harrison, W. W., and Co.	Sheffield	44	9	6
Hitchcock, F.	Winchester	30	0	0

Ogden, William, St. John's Market, Blackpool, Market Place, Feetwood, and Market Place, Preston, and residing at 38, Lark Hill, Blackpool, Jeweler. Trustee: John Taylor, 67, Church Street, Blackpool, Accountant. Dated August 28th; filed September 1st; unsecured liabilities, £175 0s. 2d.; assets, £71 5s. 5d.

Joy, John Robert, 79, Lidget Street, Lindley, Huddersfield, Jeweler. Trustee: John F. Dyson, 24, Queen Street, Huddersfield, C.A. Deed of assignment with a view to payment of a composition of 10s. in the £, payable within 14 days from assent of all creditors. Secured creditors £172 9s. 5d. Dated September 1st; filed September 7th; unsecured liabilities £602; assets £413 16s. 1d.

		£	s.	d.
Blackensee and Son, Limited	Birmingham	81	0	6
Newsome and Co.	Coventry	58	13	11
Marlow, E. J. H.	,,	36	5	3
Joy, Robert (Trustee of Thomas Joy)	Halifax	22	0	0
Ogden, Joseph (Trustee of Mary Berry)	Lightcliffe	64	3	4
Widmer, Gabriel	Liverpool	24	18	0
Shoeps Bros.	Manchester	135	11	3
Ashworth, John, and Co.	,,	43	7	3
Briggs, W., and Co.	Sheffield	46	13	6
Mark, Willis, and Son	,,	33	9	0

English Optic Company, The, 35, Hatton Garden, E.C., Wholesale Opticians. Partners: Edwin Isaacs, 79, Marylands Road, Paddington, and Albert Wulfson, 45, Cotleigh Road, Kilburn. Trustee: Lawrence Hasluck, 17, Holborn Viaduct, E.C., C.A. Composition of 5s. in the £, payable 2s. 6d. within one month from date of execution hereof by all creditors, 1s. 3d. at 7 months from date hereof, and 1s. 3d. at 13 months from said date, secured by assignment to trustee to realise, to make up deficiency if any. Dated August 27th; filed September 1st; unsecured liabilities, £952 5s. 10d.; assets, £125 1s. 9d.

		£	s.	d.
Courlander, —	London	145	0	0
Isaac, L., and Co.	,,	40	0	0
Nitselie and Gimthie	,,	58	0	0
Rackow, H.	,,	98	0	0
Woolfson, de T. G.	,,	100	0	0
Davis, —	Birmingham	49	7	11
Prost, Z.	Jura	180	0	0
Colin, H.	Morez de Jura	48	16	0
Janvier, —	,,	48	0	0
Tournier, —	Norez	30	0	0
Laurent, —	Paris	54	11	3
Creditors under £30		77	4	0

Roberson, Mary, and Edward George Roberson, both of 11, Kensington Gardens, Brighton, Sussex, Watchmakers. Composition of 13s. 4d. in the £, by four equal instalments, the first on execution hereof, and at 4, 8, and 12 months from date hereof, last instalment secured. Dated September 5th; filed September 12th; unsecured liabilities £793 11s. 2d.

		£	s.	d.
Bowman, R. T.	London	184	12	5
Jacobs, A. M., and Co.	,,	163	10	6
Greenwood, John, and Sons	,,	42	15	6
Unna, H. A.	,,	38	3	11
Thompson, J., and Sons	,,	29	19	9
Baume and Co.	,,	28	4	0
Cooper, H. J., and Co.	,,	22	9	10
Marples, Robert M.	,,	18	11	9
Roley, John	,,	11	0	0
Potter, William, and Son	,,	10	19	4
Hirch, Pritchard, and Co.	,,	34	8	3
Joseph, B. H., and Co.	Birmingham	114	5	8
Holmes, W. J.	,,	79	5	10

Bills of Sale.

Lemmon, George Francis, 23, Vicarage Road; 9, St. George's Road; and 2, Hughenden Road, Hastings, Optician. In favor of Letitia M. Sior. Dated September 3rd; filed September 7th. £200. Of property described in schedule as at 23, Vicarage Road; 9, St. George's Road; and 2, Hughenden Place, Hastings, aforesaid; also of a telescope at, etc.

Ashman, Walter Emery, 23, Loder Street, Old Kent Road, Watchmaker and Manager to, etc. In favor of Rhoda E. Elliott. Dated September 15th; filed September 16th. £40.

Partnerships Dissolved.

Parkes and Adams, 7, Shooter's Hill, West Cowes; and Castle Street, East Cowes (I.W.), Jewelers and Watchmakers. August 28th.

Kirkness T., and Co., 3, Westborough; and 14, Huntriss Row, Scarborough, Watchmakers and Jewelers. January 13th. Debts by George Edgar Kirkness, who continues at 4, Westborough, in partnership with Octavius Allen Kirkness, under the same style.

Palfryman and Pyke, 42 and 44, Market Street; and 227, Grange Road, Birkenhead, Plate, Watch, and Jewelry Dealers, and Silversmiths. September 15th. Debts by William Pyke, who continues in his own name.

The Watchmaker, Jeweler and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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Vulgarities in English Jewelry Designs.

We have been recently much amused by the perusal of an article with the above title in (of all papers in the world) the *Builder.* It is an astounding piece of ignorant egotism on the part of a would-be critic, and but for the esteem in which we have held the *Builder* as a trade journal, we should have contemptuously tossed the thing into the waste-paper basket. The *Builder* seems a very curious quarter for an article of this description and title; and henceforth, according to the writer's definition, this journal, instead of being considered as specially adapted for the use of builders, must be regarded as without even the elements of design, for according to our critic's definition, "design means the production of something which does not appear matter of accident, in which each part is inwound with, and is an *integral portion of the whole*, and no such word can be applied to mere throwing together of hetrogeneous details that have *no relation to one another.*" These are rather far reaching words, but they are not our own, and the *Builder* is quite welcome to them!

This singular critic of jewelry opens by saying: "There does not appear to be the slightest improvement in taste in this class of article, no perception of good taste, or refinement and stability of design." We should be staggered at such assertions did not the writer give us the key of the whole thing in the next paragraph, wherein he reveals the nature of the experience and practical knowledge he has had to enable him to criticise "the exquisitely minute finish" of modern jewelry, a position whose enviable heights he has reached by making cuttings of things advertised in the newspapers. Of course, such a writer is to be pitied, were it not for his indomitable impudence. He has probably never seen what the trade would recognise as a fine piece of representative work: a spray of orchids eighteen inches long for instance, a thing that would not only never appear as a newspaper block, but would not even be put in a window. But the one who is neither to be pitied nor excused is the editor of the journal for allowing such an article to appear. We cannot waste our space in annihilating this writer's calumnies *seriatim.* To use his own words, the article was anything but the result of "a fortuitous concurrence of atoms" of his brain. His knowledge of the subject is absolutely nothing; his ideas are utterly opposed to fact. No matter whether he is speaking of the antiques as seen through the glass cases of a museum, or the "mere lumps of gold representing so much bullion" as displayed in newspaper advertisements, his primitive conceptions of the art of the jeweler are hopelessly irreconcilable with the definitions of men who are recognised as art critics. In regard to his attack upon the "horsey" jewelry for lovers of the field sports, let us assure him that it is a major canon with many who have an exceptional qualification, that jewelry to be anything at all, should be symbolic; and it is the province of the jeweler to make the best of the emblems peculiar to each of the classes into which society finds itself divided to-day. One might further remark that the assertion respecting the articles attacked, that "they are entirely unhampered by utilitarian considerations," is equally erroneous, especially when the writer touches upon gold alberts; for if an albert is not an article to serve a definite use, what is? He complains that they contain no "decorative idea." Let us be gracious and give him a little friendly advice. If he libels individuals as he libels classes he will pretty soon find himself before a gentleman who wears an ideal and representative chain, that is both conceived according to art principles and highly decorated in its details. Bad art may be vulgar, but ignorant and uncalled-for abuse is far worse.

Finally, in reference to the adverse criticism in comparison of the skill of the jewelers, whose productions this would-be critic assails, we are prepared to take articles of their manufacture and compare them for "exquisite minute finish," and skill of production, with anything he can produce from the antique for any amount we may agree upon, the proceeds to go to the charities of the trade he so unjustly assails.

The Montana Ruby and Sapphire Company.

SOME ten years ago we were shown several large bags full of stones in the hands of a cattle rancher, who had come over to this country to see if they were any good. They were all subangular and water-worn; the majority of them were garnets, but a great part of them were corundums of various hues from dark blue to pinkish, the principal being a dark purple. These, he said he had bought for next to nothing from gold washers in Montana. In addition, he had several crystals which were evidently the same corundum unworn; these, he said, he had taken from a rock in which they occurred situated a long distance from where the sapphires were found in the rivers. We were very much struck with the importance of the find, and entered into certain agreements with him, by which we hoped we should soon materially benefit. But month by month went by, and nothing was heard from him. One day, while on an omnibus, we overheard a man asking the way to Smithfield Market, and getting into conversation with him, he said he was a cattle rancher, that he had got a load of beef at Deptford, and that he was about to sell it at the market. As he mentioned the name of a place of which the gem-discoverer had spoken, we asked if he knew this man. "Oh, yes," he replied; "poor fellow, I bought him out when he went off his head about a sapphire mine which cost him his life, for his whole party, except one, were killed by Indians." Subsequently we mentioned the matter to Professor Foote, and asked him if he knew of the existence of the Montana gems, to which he replied in the affirmative. He said he had called attention to them some years before, and had written a description in the *Century*. The next one to call public attention to them was the enthusiastic expert of Messrs. Tiffany (Mr. G. F. Kunz), who subsequently, accompanied by a special agent of the United States Bureau, went to Montana and made a report for the Eleventh Census. We do not think that report is published, but it is said that Mr. Kunz remarks in it: "No true red ruby or blue sapphire has ever been found in this country. Montana stones are what are known as fancy colors." By this we take it that he means ideally *true*, for in *Harper's*, December 1887, he says: "The finest sapphires for gems are collected by the miners from the sluice-boxes of the placer mines, near Helena, Montana. The gems are usually light green, blue comma, red comma, and all the intermediate shades. Often they are blue as viewed in one direction, and red when seen in another. Frequently all the colors would assume a red hue by artificial light. A very interesting piece of jewelry was recently made from these stones in the form of a crescent. At one end, as seen by daylight, the stones were red, shading to a bluish-red in the centre, and finally into blue at the other end; but by artificial light the color of all turned red. A few small gems, less than one carat in weight, have come from the same place. They were *truly ruby red and sapphire blue*. Of the latter color *perfect gems* have been found here up to nine carats in weight. By artificial light these are intensely brilliant."

The description of these agrees to what we have seen of them, especially their *noctichroic* characteristics, *i.e.*, their change of color by artificial or night light. From these descriptions it is evident that the existence of the gems has long been known, and various attempts have been made to work the deposit, and several times they have glutted the American market. Mr. Kunz would not undertake the enterprise, as the gem-bearing tract is so large. Indeed, it is said that ex-Governor Hauser of Helena owns an area twenty times as large as the one of which we are about to speak, which consists of about 4,000 acres of land on the right bank of the Missouri River, about twelve miles N.W. from Helena. This plot has been secured, and trials of a separating machine have been made with such results that a company is about to be brought out called The Sapphire and Ruby Company of Montana, with nearly half a million capital, and with the most impressive body of incorporators one would often see, including Sir Francis Knollys (Secretary to the Prince of Wales), Lord Chelmsford, Earl Mowbray, Earl Clarendon, Earl de la Warre, Duke of Leinster, Marquis of Breadalbane, Marquis of Bristol, with numerous Lords and prominent men. The directors are Lord Chelmsford, E. W. Streeter, Sir Robert Collins, Horatio Steward, F. H. Bowman, H. M. Deeley, Millford Hallett, and W. B. Gurney, with H. Moir as secretary.

The value, however, of a mining property cannot be gauged by the social position of those who aspire to become connected with it, otherwise the Burma Ruby Company would be now rolling in its millions, considering the supporters of this project included the crowned heads of Europe and Asia. Each case must stand upon its own bottom; there are many things which look charming on paper, but are very different in actual fact. Moreover, we fear some of the statements that have been published in regard to the Montana deposits would be misleading to many. We have made careful inquiries from time to time, and are by no means prepared to pronounce this "find" a greater one than the Cashmere sapphires, which were brought down on mules. No one doubts the existence of sapphires in Montana, so that the opinion of Professor Church in identifying their real nature is of little value, as he does not say a word about the quality of them. We have repeatedly had it, on what we consider good authority, that of the total finds about 5 per cent. are worth the cutting, and amongst these really fine rubies and sapphires have a hazy uncertainty. With the heavy expense under which this deposit will have to be worked, it will be necessary to sell quite £100,000 worth of stones a year to make it equal to, say, the De Beers Company. Of course we do not say this will not be done, nor do we say that the late diamond finds in Kentucky will not ultimately rival the Cape Mines. Past experiences, however, would make us a little careful in advising our friends to take up gem-mining.

RESPECTING the Chicago Exhibition of 1893 the London Chamber of Commerce have issued a circular letter in which they state they have been assured by the American deputation, which recently passed through London, that all exhibits forwarded thither will, as long as they remain unsold, be treated as goods in bond, so that the duties ruling need in no way interfere with the proper representation of the products of British industry. The Chamber therefore hope that, in view of the wide acceptances of the invitations to exhibit by all nationalities of the Northern and Southern American Continent, as well as by the nations of Europe, Asia, and Africa, and by our various colonies, and the keen competition to which such acceptances will give rise, as many British producers and manufacturers as possible will respond to the invitation given, and will take the necessary steps to make known their intention to send exhibits as early as practicable. Manufacturers are reminded that our Government have accepted the invitation of the United States Government to be officially represented, and have appointed the Council of the Society of Arts to constitute the British Commission. All communications respecting space and other conditions should be addressed to the Secretary of the British Commission, at the Society of Arts, John-street, Adelphi, W.C.

The Illustrated Patents Record, and the list of patents applied for, is unavoidably left over this month, but will be given in the next issue.

Notes About Town.

The Month Past. From all accounts, considering the excessive downpourings and floods all over the country, coupled with the out-of-season state of London, business was quite as brisk as one might expect. There is very little that is new being displayed; no doubt novelties are being saved for next month, for the Christmas trade.

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Gems in Fashion. We are pleased to say that the inquiries for emeralds are increasing, indeed, it would not be an exaggeration to say that they are coming quite to the front, and are becoming the fashionable gem. We noticed the increased demand for them several months ago, which has been improving. The same may be said of Paris, where one can now see thousands of pounds worth of them on show. One wonders where they have been kept, for they burst upon us like a shower of manna in the desert. Lovely sprays are coming forward with emerald leaves and diamond flowers, and in some instances other colored stones are being introduced. There is no doubt that the rage for colored stones is spreading, and with this colored diamond ornaments are being inquired for; we have heard of the moving of a number of these lately, including some very expensive pieces. Turquoise is also very favorably received, and a number of very expensive pieces are being made and sold up to four figures. Fine large specimens of "old stones" are commanding very high prices. Necklets, tiaras, and large sprays are absorbing the supply of fine stuff in the market, and far more gents' turquoise rings are inquired for. Fine old pure light blue (not too light, of course) is being very much sought after, as most of that recently introduced into the market is dark.

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Forged Cheques and other rogueries. A gentleman of foreign aspect, about 30 years of age, just over medium height, dark hair and moustache, and fresh complexion, has been visiting several houses trying to obtain goods upon payment of cheque. A man of similar description has also swindled some Manchester jewelers, by having the goods sent to a house for selection, with which he decamps out the back way. There is also a member of the light-fingered fraternity about cleverly "ringing the changes."

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Is it lawful to advertise? In passing Oxford Circus the other day we noticed an old retired member of the trade, whom we had known many years ago. He said he had been standing there for a long time expecting to see some old members of the trade. But, alas! when he mentioned a long list of names, where had they gone? Firm after firm of West End manufacturers were mentioned, all of whom have practically disappeared. Businesses which were once of colossal dimensions have dwindled down to nothing or died quite out, and it would be too pointed to say where some of the proprietors have gone. As one reflects upon this melancholy shifting of scenes, the thought will present itself: are the lines upon which the better-class jewelry manufacture has been carried out in accordance with what is recognised by many as business policy? Ought a manufacturer to be enshrouded with that mystery and secrecy of existence which most of the West End retailers demand of him? Ought his hands to stand idle, and his business dwindle away, just because he must not advertise his productions? We are obliged, in fairness to all, to say decidedly, No. We have on one hand retailers who are anxious to get hold of certain goods or certain kinds of work; on the other there are men with just these goods, and capable of performing just that kind of work, yet the latter must not publish the fact. And what is the result? Is there less business being done in the West End and City in jewelry? Certainly not; but others are getting it who work more upon the recognised principles of modern business.

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The German Emperor Medal. Of the competitive designs sent in for this medal the one selected is that of Messrs. Elkington and Company (Limited), 42, and 44, Moorgate Street, and 22, Regent Street. The medal has on the obverse a portrait of His Majesty the German Emperor, in the uniform he wore when he visited the City on July 10th, 1891, side by side with the portrait of the Empress; and the inscription—Gulielmus II., Imperator Rex. On the reverse, to the right, stands a figure with a helmet, representing the City of London, and resting her right hand upon the throne, on which is seated a female figure—Germania—to whom she is pointing out the shipping in the River Thames. At her side is a shield showing the arms of the City of London. Germania is shown with her left hand holding a sword, while her right rests upon a shield, bearing the arms of Germany. In the foreground a lion is peacefully reclining. At the foot of the throne are two doves, with the date of the Emperor's visit. The allegorical figures are represented within a balustrade; beyond, to the right, the masts of ships are visible, and to the left St. Paul's Cathedral and the City.

* * *

The New Watch-Case Manufacturing Company. A company has been registered, with a capital of £10,000, which we hear has been subscribed privately, to manufacture watch-cases in Birmingham or elsewhere, in accordance with an agreement made between John Ashwin and Philip H. Lawrence on the one part, and C. H. Kingston on behalf of the Company.

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Good Lines for Someone. Mr. W. P. Hartley, Manufacturer, of Aintree, has intimated to the council of University College, Liverpool, that he will be responsible for the £1,000 necessary for the provision of a clock and chimes for the tower erected by public subscription in commemoration of her Majesty's Jubilee. A "Gold Cup" of similar value is about to celebrate the Marquis of Bute's Mayoralty of Cardiff.

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Watches. Fancy forms of jeweled watches, such as beetles, and geometric designs, are being asked for in some quarters; while gun-metal oxydised watches are moving. Watch bracelets are, if anything, on the increase, and new and elaborate designs are appearing.

IMPORTANT NOTICE.

Next month we purpose commencing a series of articles on ticket-writing of an educational character. Everything in connection with the art will be described and explained, and fully illustrated.

Elsewhere will be found the first of a series of articles upon "Windows and Window Dressing," supplied in response to an often preferred request. We hope to make these articles the most important that have ever been written upon this subject; indeed, so far as we are aware, it is a subject that has never been very extensively treated of. For many years we have been fruitlessly looking for such a set of articles ourselves. They will be profusely illustrated with designs, plans, and elevations of the principal styles of window dressing, including some originals, which we consider improvements upon our earlier children, which have been so flatteringly admired by the trade, more especially those connected with what may be called Draped and Velvet Stand Windows.

Birmingham Notes.

(By our own Correspondent.)*

MOST of the scientific and philosophical instrument makers are busy on their special lines, perhaps not quite so much as the various branches of the optical trade are. Several of the large firms are quite pressed even for cameras and lenses, which are not expected to be in such demand so near Christmas. It is only natural that lanterns, and the various accessories that are continually being added to them, should be in request at the approach of winter. Cutting in prices is still going on, and quotations for goods in very many lines are ridiculously low.

WORK in micro slides is also fairly busy. We are glad to see that much of the petrological work, which was formerly done on the Continent, is now gravitating towards Birmingham. There are now quite a number of houses whose work is as cheap as the Continental. There yet remains a good fortune for any one who would make a speciality of axial sections, the greater part of them being imported from Germany, France and America. The price obtained for these is very high, but of course the demand is not so great as for common cheap ones. Still, there is nothing after all bewitching in their production, only a little knowledge, and in some crystals with a basal cleavage they are more easily prepared than ordinary sections, while the price obtained is four or five times as high.

SPECTACLE makers are also fairly busy, both with lenses and frames; and with the improved methods of manipulation that have been added of late, there is no necessity whatever to send a single job out of the country.

FOR the most part there has been a decided feeling of disappointment among the Birmingham jewelers during the month just passed. September having proved an almost exceptionally good month, there was a natural expectation that October would follow suit. The first few days, however, dispelled this illusion, as immediately September closed the wave of prosperity seemed to abruptly recede, and throughout the month there has been but a jog-trot sort of business, without that display of genuine energy that a good October ought to show. We do not wish to infer that no business has been done, but simply that there has been no exceptional demand. The bulk of business done would have made a splendid June, July, or August; but it has been rather below than above the average for October.

IN spite of this our reading of the signs of the times is not pessimistic. We think the tendency is to a severe rush for the next two months, and much of the trade that should have been done already is simply delayed; and we shall gain the benefit of it between now and Christmas. We would therefore advise our friends to keep their stocks full to cope with the coming demands. We have heard various grumbles and whining prognostications of an utter collapse of the Christmas trade; but we certainly do not see any signs to confirm this opinion, and we have still faith in our own judgment. It were not well to give too much credence to the chronic grumblers. Further evidence in support of our idea is found in the fact that the bullion dealers report good sales. They, being the very basis of the trade, form the safest criterion as to its actual condition. Gold and silver are not goods to be bought on long credit, and we may safely rely on it that any increased demand for the raw materials is the result of genuine business.

THE reports from the North are poor, and do not show any great expectations for the immediate future. Our best results lately have been from the London trade, and in it we find our chief prospect.

ANY report from Birmingham for the month of October, 1891, which did not contain a reference to the Triennial Musical Festival would be seriously incomplete. It would, of course, be equally out of place to treat of it in the present report on its musical aspect; but it justly claims notice at our hands as a specal stimulus to our local trade. On no other occasion, probably, is there such an influx of aristocratic and wealthy visitors to our usually prosaic city. It was naturally anticipated that some little of the surplus wealth would be invested in jewelry, and our local shopkeepers laid out some tempting arrays wherewith to entice it from the pockets and purses of our visitors. Nor were they entirely disappointed, as a good deal of money was spent amongst us, although we have not heard of any specially noteworthy or expensive articles having been disposed of. It is a remarkable fact that people will not buy their jewelry in Birmingham; the names and the high prices of Bond Street or Regent Street being necessary to stamp an article as of genuine value.

THE diamond industry is still suffering from the bad results of the unhealthy combinations at the fields. The cutters of Amsterdam are complaining loudly—many of the workshops being closed for want of "rough." Besides this, the sale of diamond ornaments is greatly restricted on account of the high prices still obtaining. We much doubt both the justice and the advisability of allowing the existence of such trusts and combinations, which serve simply to enrich a few, to the lasting detriment of a large section of the community.

A LARGE firm of die-sinkers here have for some time past been anxiously awaiting their usual autumn orders for medals and club badges. During the slack summer months they laid down a lot of new plant to enable them to more completely cope with the expected orders, intending to finish them entirely—enamelling included—on their own premises. However, the orders have not yet turned up, although much overdue, and fears are entertained that they have gone elsewhere. We hope this is not the case, not only to save the said firm from disappointment, but because Birmingham has special facilities for such work, and has already gained a good name for it.

WE have not heard anything this year about the "Art Congress," which some twelve months ago was running amuck among the artistic industries of Birmingham. Nottingham was to have been its seat of operations, but whether it still exists, or whether its vapid vaporations of last year have suffocated it, we neither know nor care. Its mission to the makers of jewelry was certainly not successful, as its teachings were based altogether on misconception and ignorance of the requirements of the trade.

THE bankruptcy of David Maurice, of London, is a matter claiming special attention. His public examination revealed a system of pawning and accommodation which cannot possibly be called legitimate trading. However, as the matter is at present *sub judice*, further comment is impossible; but we call attention to it, as many of the Birmingham manufacturers are interested. Our Jewelers' Association have the case in hand, and intend submitting it to a thorough investigation.

IN connection with the alleged forgery of the Birmingham Assay Mark case, we have been wondering how many there are actually engaged in the trade who could positively identify a given assay mark as distinct from a series of fraudulent marks in imitation thereof. In the plate trade, where it is customary to stamp E.P. goods with marks similar to assay marks, doubtless the education in this direction is keener; but with the minute marks used for jewelry the difficulties are very great. Further, how often—or rather how seldom—are the marks carefully examined? An article is sold as hall-marked, and the buyer gives a cursory glance at the marks, but does he go to the trouble of examining to see if they are really correct or not? Again, in many cases the polishing and finishing of the goods nearly obliterate the marks, so that accurate identification is almost impossible. The drift of our thoughts is this: what opportunities there are in this direction for fraud and dishonesty in our trades; and apart from the vigilance of the various assay authorities, what little risk there is of detection. Calling to mind the different prosecutions which have cropped up during the last few years, it seems that by far the greater number have been discovered by accident. Nor are we able to suggest any system of surveillance which could successfully cope with the clever swindles occasionally perpetrated in our midst. It might, however, be well to refresh the memory of our friends—especially our country readers—as to the distinctive marks of our Birmingham Assay Office. The sign manual of the Birmingham office is an anchor; all articles assayed here bear this mark. The dominant letter for the current year—July 1st, 1891, to June 30th, 1892—is a small (that is not a capital) Gothic "r." The distinguishing badge for goods of 18-ct. quality is a crown. 15-ct. is marked by the figures 15.625; 9 is marked by the figures 9.375. Silver bears the mark of a lion *passant* (that is, in the act of walking). If these particulars were borne well in mind, such minor frauds as passing off gilt silver or 9-ct. as of higher qualities would be rendered impossible.

ONE of our veracious contemporaries, we notice, is telling its readers what happened on December 31st, 1891. This is a simple error and easily understandable; but the query is, if they make a mistake in so simple a matter as the date of the year, what reliance can be placed on the elaborate figures and statistics with which they are in the habit of favoring us?

ONE of our largest firms here has had occasion to send round a circular calling attention in curt terms to the fact that Mr. So-and-So, their former traveler, is no longer in their employ. There is always an unpleasant savor about such notices which engenders a general feeling of uneasiness. No reason whatever is given for the fact.

JUDGING by the quantities of advertisements for workmen now appearing in our papers, the manufacturing portion of the trade here is fully occupied. There is no necessity at present for any workman (worthy the name) to be out of employ.

Let the shoemaker stick to his last; and the critic of the *Builder* to his jerry erections and "villa residences." Evidently the said critic has totally mistaken his vocation when he leaves his bricks and mortar and attempts to soar to the heights of gold and gems. The article we are referring to is on "Vulgarities of English Jewelry Design," and it is a fierce and incoherent tirade against the whole scope of present day design in jewelry. It is characterised by an utter disregard of truth in its statement of facts (so called) and instances, and by a deplorable ignorance of the real bearings of the subject, which would have prevented anyone with less assurance than the writer of the article from touching the matter at all. But stay! even as we read we detect a strong undercurrent of "malice prepense," which seems to suggest that the poor fellow, finding his transcendental talents unappreciated and unremunerated by the jewelers, has been forced against his will to find scope for his abilities in the artistic atmosphere of cottage property and tenement dwellings; venting his spleen meanwhile in an ungrammatical display of his own bad taste. We wish him joy in his new career; and, for ourselves, were quite content to pass over his remarks with a pitiful and contemptuous silence. As, however, his opinions are expressed with all the bombast of authority, and may therefore mislead the public, we deem it well to give a simple but emphatic denial to his nonsensical contention. This matter has been taken up by some of the Birmingham papers, and several letters, for and against, have appeared. One of the writers, in his anxiety to be smart at the expense of the poor jewelers, uses the adjective "unbeautiful." What amount of artistic perception can such a man lay claim to? In this connection we may well ask the question, What is the value of any trade article in the ordinary daily newspapers? To judge by the manner in which subjects connected with our own business are treated, such articles are not worth the paper and ink wasted on them.

IT is with pleasure we turn from this subject to direct attention to an article in *The British Trade Journal* on "The Future of the Export Trade in Jewelry." This article is well worth perusal, dealing, as it does, with matters vitally affecting the shipping and manufacturing sections of our trades. It traces the various causes which have tended to the decline of our export business, the "on consignment" system being cited as the first wrong step. The evil results of this system—bogus auction sales, the wholesale shipping of cheap and nasty goods, etc.—are then exposed, with all their crippling influences on genuine trade. Another matter referred to, and one that is of importance to our local makers, is the constant emigration of skilled workmen to the Colonies. The development of manufactures abroad is a most serious drawback to our shipping trade; and this feeding of the colonial workshops with our own trained operatives is a great mistake on the part of our employers of labor. Good and reliable workmen should be kept at home at any cost. Still, the outlook is not by any means bad, and the article concludes with a very fair augury for the future of our export trade.

FOR the diamond fraud the sentence passed on the man Spitzel is well deserved, and we trust the appeal for its reduction will not be successful. It is only by heavy punishments that such crimes can be prevented, the gains to be made being well worth the risk of light sentences. It will be a bad precedent if the term is reduced. We well remember this man some two or three years ago making great efforts to get large parcels of goods on credit from the Birmingham makers. We do not know, nor would we infer, that his purpose then was dishonest; but in the light of recent events it is well that the said makers did not part except for cash.

IT is an unfortunate fact that the jewelry and kindred trades seem to be the happy hunting-grounds of people with dishonest proclivities. We cannot look over any paper without noticing something of fraud or robbery appertaining to jewelry. The variety of operations would be amusing were it not so serious a matter. We often think that an equal amount of cleverness expended in a legitimate direction would insure a safe and honorable income for life to the possessor.

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[*] We must not be understood as endorsing all, or necessarily any, of the opinions of our correspondent, who writes on his own responsibility.

Sheffield Notes.

(By our own Correspondent.)[*]

NOTWITHSTANDING the fact that some firms in the Electro-plate Trade are tolerably well off for orders, it is to be feared that on the whole things are on the down-grade. There is no very great out-cry as yet, but indications are neither few nor far between that the baneful influence of the M'Kinley tariff is being felt by those trades not directly affected by it. The silver trade, for example, could bear with equanimity total exclusion from a market which it has not of late years set much store by; but when the buying powers of its customers in the home market are crippled in consequence of such exclusion the case is altered. At any rate, the business outlook is by no means so rosy as it was this time last year, whatever it may be nearer Christmas. Such is the general impression one carries away after mixing much with members of the trade. Some few may be doing extremely well, but with the many there is room for considerable improvement.

AS regards the Sheffield trades generally, the Board of Trade returns continue to be anything but pleasant reading. Month by month the exports of cutlery are declining in bulk and value. Some philosophical individuals profess to regard this state of things as a blessing in disguise, inasmuch as it is putting a stop to the manufacture of a class of goods that were no credit to the town. It is quite true that the very best kind of cutlery is still finding a ready sale in the States in spite of the tariff, and it may be that the pruning knife judiciously applied to the remainder will be of ultimate advantage to us as a community. All the same some few will undoubtedly bite the dust before things finally readjust themselves to altered circumstances.

THE town in its corporate capacity, however, evidently does not anticipate collapse in the near future. Power has been obtained to borrow £83,000 in order to erect the new Town Hall. No one expects that this amount will be sufficient; but in any case a respectable increase to local taxation is assured for some time to come. The foundation-stone of the building has been laid by the mayor with befitting ceremony, and as the day happened to be the anniversary of his worship's wedding he afterwards entertained his friends in the splendid rooms of the Mappin Art Galleries. It may be added that the artistically got up silver trowel with which Mr. Clegg performed the ceremony of laying the stone was made by the well-known firm of Walker and Hall, of Howard Street.

MENTION of the Art Galleries reminds me that Sir Frederick Thorpe Mappin has again come forward with a princely gift of pictures to the town. As the private collections of pictures in Sheffield are both numerous and large, it is to be hoped that others will follow Sir Frederick's good example, especially as there is still room enough and to spare in the noble building in Weston Park.

THE bankruptcy of Mr. J. W. Lindsey is full of instruction to all business men who are not too conceited to learn. As this is about all his unfortunate creditors are likely to get out of his estate, it would be folly not to make the most of it. Some two or three years ago Mr. Lindsey came from nobody knows where, and engaged in a variety of philanthropic work, mostly connected with the children of the slums in Sheffield. As he was engaged in no trade or profession, he was presumed to be rich. Quite recently, however, Mr. Lindsey took a warehouse and offices in the centre of the town and set up as a wholesale merchant. As his orders went out inquiries respecting him came in. It is to be presumed that these resulted satisfactorily, because he succeeded in obtaining goods to the extent of £700, which goods, as Mr. Parkin told the judge of the County Court, "he did not appear to have dealt with in the ordinary way of business." This was rather a negative way of putting it, but as Mr. Lindsey is not here to explain his creditors will have it all their own way—as far as argument goes. His Honour made a receiving order; but the valuable experience the creditors gain far outweighs the money value of any dividend they are likely to get from the winding-up process.

THE complete abolition of the duty on silver plate may now be regarded as an accomplished fact, inasmuch as the duty paid on all goods in the hands of manufacturers at the period of the change has been refunded by the Excise Authorities. The claims sent in were considerably less in value than the amount set apart for their liquidation by the Chancellor of the Exchequer, and when, after a scrutiny, they were still further reduced, it was found that Her Majesty's Government had to pay much less than they had contemplated. The permanent annual loss to the revenue, however, will prevent the Chancellor of the Exchequer from feeling excessively jubilant over the fact; while he will not have the satisfaction of knowing that anybody is appreciably benefitted by the change.

WALKING into town the other morning with a manufacturer who advertises in this journal, I put the question to him, "Do you find advertising pay?" "Oh, yes," he replied; "no doubt about that." "But," said I, "do you never *lose* by it?" "No," he answered, "when I receive an order from a person I don't know, I ask for a reference. Some few send it, others drop the matter. Of course, I don't suppose that all who do not give the required reference are 'bad'; some are offended, no doubt. Still I find it better on the whole to do as I do. The volume of my trade may be less but my losses are *nil*, and that is something to be thankful for." This may be taken as a reply to those people who don't advertise because they fear it will make them bad debts. Every silversmith knows that under any circumstances considerable circumspection is required in opening new accounts. That being understood, there is no reason to believe that the profits of judicious advertising may not be as surely calculated upon as those of any other kind of investment.

WE have just had a distinguished visitor in our midst in the person of the Lord Mayor of Dublin, whose purpose was understood to be a study of our system of sewage. Besides being incidentally a proof that Irishmen really do sometimes think of such prosaic matters, it may be looked upon as a compliment to ourselves. Our sewage system, however, has already been adopted by Glasgow, where the necessary works are in progress under the superintendence of our borough engineer, Mr. Alseng, whom we have kindly *lent* to the Scottish City for that purpose. It will be seen, therefore, that although we may be a long way behind Birmingham as a well-governed community, we are certainly improving in a municipal sense.

A FAMILIAR figure in Sheffield some years ago has just passed away in the person of Mr. J. W. Burns, who, until laid aside by illness eight years ago, occupied a position in the Spoon and Fork Department of Messrs. William Hutton and Sons, West Street. Mr. Burns was one of the artisans elected to visit and report upon the Paris Exhibition some thirteen years ago, and his report upon the spoon and fork trade as carried out on the Continent was characterised by considerable ability. His employers testified to his worth by making him a weekly grant throughout the period of his long illness.

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[*] We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Country Notes.

WE are glad to chronicle the fact that classes are about to be formed in Prescot for the teaching of theoretical and practical watchmaking in connection with the Technical Education Scheme.

A PARTY of about 800 strong, representing the Lancashire Watch Company, participated in its first annual excursion. Headed by the managing director, Mr. T. P. Hewitt, they left Prescot by special train shortly after 12 o'clock, arriving at the Manchester Zoological Gardens about 1.30. Fine weather favoring them, rambles were made amongst our "distant brethren" and acquaintances made "with friends from many a distant shore." At 6 o'clock a goodly party set down to high tea, and it was not until the small hours of the morning that Prescot once more received into her arms her holiday-making children.

WE have previously called attention to the dead-and-alive state of the Prescot Watchmakers' Association, and are sorry we have nothing better to report about it now. Indeed, so low has it dwindled that a meeting was convened just as we were going to press with our last issue, to consider whether it was desirable to dissolve it or not. There were over fifty members present out of some sixty-four, to which low figure the society has dwindled, from, we believe, over 250. Why something has not been done to keep such a society together is a mystery which perhaps some of our friends at Prescot can venture to answer. We are very sorry to see that a nominal subscription of 3d. a week was found too much for its members. It is absolutely certain that if the maximum amount of good is to result to a trade, combination is indispensable. A trade association is different from a commercial speculation, the object being the weal of its members, and the obtaining of those benefits which do not result from individual action. Although the proposal to dissolve was put, it was only carried in an invalid manner, as not five-sixths of the total strength of the society were favorable to dissolution. We trust, however, that the association will start again with new determination and energy, and that it will even yet acquire a tone which shall be above all petty jealousies, and give strength and impetus to the trade in its hour of opposition and competition.

MESSRS. HEWITT are to be highly congratulated upon their recent production of the half movement, and although it will wipe out an old acquaintance in the shape of a frame with three or four wheels and pinions, we feel no heart pangs at the loss even of so good and old a friend as it has been. The "new movement" which the Lancashire Watch Company has turned out is nevertheless not full blown, but it is one or two steps nearer "complete"; and we hope some day in the immediate future to see them turn out an entirely new one altogether ready to case. However, in the new child the finishing is done by machinery—a point formerly insisted upon as being the special province of hand-work—so that, to employ a paraphrase, we may say that the wheels of machinery grind hard, but they grind exceedingly slow.

WE are informed that manufacturers of cameras find the home trade dropping, which they attribute to the season of the year. Many, on the other hand, are busy with lanterns in all their branches, new lanterns appearing and slides multiplying almost *ad infinitum*. They, however, say that orders on hand will last fully up to Christmas. There is also a development of the micro slide business going on, especially for export. In fact, there is a development in many of those kinds of instruments that are mostly exported, such as barometers, of which perhaps the older Fitzroy claims a greater share than in the home market.

WE hear that in Manchester there is a generally good all round demand for physical and philosophical instruments. Lanterns and slides are being asked for, as are the generality of optical goods. With the approaching Christmas electrical instrument makers are very busy.

IN Liverpool the export trade is fairly well employed. Nautical instrument makers have a few good lines on hand, as also have the mathematical instrument makers. Christmas trade is also manifesting itself.

JUST as we were going to press with our last issue a most imposing wedding ceremony was being performed at the quaint old church within the grounds of Llantilio Court, between Mr. Kevitt Rotherham, third son of Mr. John Rotherham, of Keresley Grange, Coventry, and Miss Frances Jackson, third daughter of the late Hon. Sir Henry Mather Jackson, Bart., Judge, and formerly M.P. for Coventry. The ceremony was doubtless the grandest and most imposing that has been witnessed for many a day. The presents (which would fill about two columns of this journal) included a silver tea and coffee service, and silver cigarette box, from the workpeople of Messrs. Rotherham and Sons, together with numerous others from gentlemen connected with the firm.

WE are highly gratified at the steps recently taken by the Coventry Technical Institute. Their winter session is now in full swing with an increase of numbers upon last year, and a course of training as complete as could well be in practical work; but in addition to this there has been established a day class in order to impart a sound theoretical knowledge to apprentices. We hope the masters will take the opportunity thus afforded, and allow time, and, if necessary, funds, so that deserving youths may attend these classes. Indeed, we should like to see this made a feature in indentures—it would assuredly pay both employer and employée alike, and would hold out another advantage to the apprentice. We are frequently appealed to by country watchmakers in a dilemma over being unaccustomed to teach the apprentice his trade, but here is a solution to the whole question.

AS one fact is worth a thousand arguments, it may not be out of place to reproduce a letter which appeared in the *Coventry Herald* with respect to the above classes:—

The re-opening of these classes gives me an opportunity of asking for a little space to express, as a late student, my sense of pleasure and profit gained through the instruction received there. The want of time and other circumstances prevented my going in for theory, as it may have done others; but finding that classes for practical teaching were open I was amongst the first to attend, and many times have I been glad that the start was made. I am referring to the classes taught by Mr. Bonnicksen and Mr. Overton, two workers not surpassed by any in the trade. Mr. Bonnicksen's class for practical springing should draw a good number of students. Here the making of Breguet springs is taught in the most approved and proper way. Any finisher who can handle an ordinary flat spring fairly well and take a pleasure in his work would not find any great difficulty. All he requires is three pairs of tweezers and a watch. Mr. Bonnicksen's teaching is so free and unreserved that I felt at the end of the first night that I had received full value for the fee I had paid for the term. Closely connected with this is Mr. Overton's class for finishing. Here a student may take up any part he desires, as for instance, the doing of three-quarter plate and Breguet stud works in a style so different to much that passes under the some name. There should be many ready to avail themselves of an opportunity to produce such work as that made in Mr. Overton's style, and here the requirements are less to begin with than in the springing class. I feel so confident that there must be others who would soon share my own experience if they would put themselves in the way to do so, that I shall be glad to know the number of students is largely increased. There is nothing to lose and much to gain.

THE second annual dinner of the Coventry Watch-Case Makers' Society took place at the "Watchmakers' Arms," Spon Street, Coventry, on the evening of the 5th ult.; the chair, on the occasion, being occupied by Councillor Corbett. There was a goodly attendance, including the president, Mr. E. Stynes; the secretary, Mr. Darrah, and other prominent members connected with the trade. The secretary, in his report, congratulated the members on their increased financial position and numerical strength. He said that the committee were confident they had been the means of preventing reduction of prices in certain cases. The Chairman, in proposing "Success to the Coventry Watch-Case Makers' Society," said he entertained a strong feeling towards trade societies, as no permanent good could be done without unity. Amongst other reforms the speaker would have liked to seen effected, was the payment of apprentices, not according to rule, but according to their ability. He dwelt upon the surprising fact of the little combination in the watch trade, and advocated its institution on just and proper lines, to which he believed no manufacturer would object. Referring to the Merchandise Marks Act, he said he did not consider it went far enough, and contended that every foreign made watch should have the words "foreign make," plainly placed upon its face. The President, in replying to the toast, referred to the work of the society, and the great benefits it had achieved for its members, remarking that to-day there were scarcely half a dozen members of the Watch-Case trade who did not belong to the Society. Mr. McKnight proposed "The Trades of the City," and the Chairman responded, regretting the bad state of the cycle trade, but hoped it was only a temporary reverse. The other toasts were "The Chairman and Vice-Chairman," "The Press," and "Hostess." During the evening songs were given by Messrs. Stynes, Darrah, Chattaway, Moore, Pritchard, Arnold, W. Francis, and Pendleton, and a recitation by Mr. Clarke.

MR. W. JEFFS, Fleet Street, Coventry, has formed a partnership with Mr. Charles Scarisbrick, late manager of the Coventry Watch Manufacturing Company. The firm will take up movement manufacturing in Meadow Street, Coventry.

THE growing scarcity of ivory has for some time stimulated the attempts frequently made to produce a good artificial substitute. The latest effort in this direction appears to be fairly successful. The manufacture of the article is based on the principle of employing in its composition the chemical ingredients of real ivory. In the early stages of its manufacture it is sufficiently plastic to be pressed into shape in moulds, while at the end of about four weeks it becomes perfectly hard. If the new substance in practice justifies the claims of its inventors, it will certainly supply a "long-felt want," and be used for a great variety of purposes in the Sheffield trades; but so far as silver goods are concerned, ivory will continue to be used as long as tusks are to be had.

Obituary.

We are sorry to have to record the death of Mr. Jules Nordmann, whose agreeable manners in the capacity of head of one of the oldest and largest Swiss watch establishments in this country have been admired by many of us for a quarter of a century.

Time passes so quickly that it seems hardly possible to realise that Mr. Jules Nordmann had reached the age of fifty-four when he died on the 8th ult. Overstrained by the rush of modern business when attacked by the wretched influenza, which with its characteristic acumen laid hold of the weakest part in his constitution, Mr. Nordmann was cut off at a comparatively early age, and in the midst of an exceedingly useful career.

Transatlantic Jottings.

IT is estimated that the total loss sustained by jewelers and opticians in the recent conflagration in Nassau Street, New York, will reach 60,000dols., of which not more than 25,000dols. is covered by insurance.

* *

MOVED probably by the appearance of the Goldsmiths' and General Burglary Insurance Company, Americans are realising the advisability of forming such an insurance, and are trying to induce their Alliance to take up the matter. For once in our lives we appear ahead of Cousin Jonathan. Bravo, Mr. Buchanan! They, however, say they have long felt the need of such an institution, pointing out their insurances against fire, earthquakes, cyclones, and several other things, and that the loss sustained from all these put together does not equal that suffered from burglarising, against which there is at present no means of insurance.

* * *

ONCE more war rages between the big watch manufacturers. It is well known that John C. Dueber has been fighting the watch trusts for several years, and many in the trade consider they have to thank him for many important and great reductions that have from time to time been made in American watches. But whether it is with the object of sending John C. Dueber to the wall for ever, or whether from other causes, the Waltham and the Elgin Companies have agreed to drop their 18-size movement 20 per cent. This, of course, would be most serious to holders of large stocks, but fortunately all jobbers hold an agreement with the Elgin, by which they are protected against any reduction in prices which may from time to time be made; otherwise it would never have been safe for them to carry large stocks. But as it is, both the Elgin and Waltham will recoup all jobbers, which bounty will be further extended to dealers also by the Waltham. It will therefore fall rather hard upon dealers who happen to have a large stock of Elgin watches on hand. It is estimated that more than 100,000dols. is lost in Chicago alone by the retailers.

* * *

ON the other hand both the Elgin and Waltham Companies repudiate all intention of opposition to John C. Dueber. They assert that they have from time to time introduced new machinery which enables them to turn out watches in greater quantities, and hence cheaper. This has had the effect of greatly reducing the wages of some of the hands; but they maintain that it is merely a readjustment of prices, and that the men being able to produce so many more of these in the same length of time ought to receive so much less each.

* * *

AS a consequence of this 20 per cent. drop, other factories have had to reduce the wages of their employés, at rates varying from 2½ to 15 per cent. But in point of fact as this drop only affects the 18-size "Raymond," a line which other houses do not go in for, it need not necessarily affect their specialities. The rebates made by the Waltham and Elgin Companies, are said to run up to nearly one and a half million dollars, a clean wipe out of the profits for twelve months.

* * *

MANY of the factories are behind in their orders, especially John C. Dueber, who has met his liabilities before they are due, and has enough orders on hand to last him for months.

* * *

AT a recent meeting of the Retail Jewelers' Association of Missouri, the question of the Elgin National Watch Company, "whether it would be advisable to place Breguet hairsprings in low grade movements," was discussed, and answered in the negative.

IN a recent case from Judge Ferguson, in Philadelphia, the Court made a statement of the value of stock in the Elgin Watch Company. By this it appears that the company had May 1st, 1880, capital stock to the amount of 884,000dols., and surplus of 331,451.96dols., a total of 1,215,451.96dols. Up to the close of 1887 it had increased its capital purely by stock dividends from profits actually accruing to 3,000,000dols., and its surplus to 836,196.70dols., or a total of 3,836,196.70dols. In addition to this increase in capital and surplus from profits, being 2,620,744dols., or over 215 per cent. in seven years, there had been a 10 per cent. cash dividend each year except one, when 20 per cent. was divided. These dividends must have amounted to at least another million, making the total profit on the investment as it stood May 1st, 1880, about 300 per cent. in seven years. It has now 3,074 employés on its pay roll.

* * *

THE San Jose, Cal., Watch Factory is now an accomplished fact, and it is expected to have their products upon the market very shortly. It would do Britishers good to read how the public-spirited papers tried to run this enterprise on the grounds of the incalculable benefit the county would receive from its existence. It would be the making of the English watch trade if this public spirit, would enter into the establishment of factories where money could be turned over and earned, as illustrated in a foregoing paragraph in connection with the Elgin. Should such companies at any time start, we should be pleased to furnish them with extracts, which they would find of great use.

* * *

DURING this season one firm bought 12,000dols. of pearls found in the rivers of Wisconsin, and North Illinois. Lately the low water in some of these rivers has tempted many a farmer to roll up his breeches, or don a "mac," and wade through the waters, often, no doubt, when he had better have been attending to his crops.

* * *

AS showing the interest the European manufacturers of jewelry are taking in the World's Fair, one firm alone will have on exhibition goods to the value of 800,000dols., a colossal sum, surely. This firm will have in its exhibit one silver piece the value of which alone is 25,000dols. Another firm will send to the exposition 400,000dols. worth of its manufactures.

* * *

THE adventuress, best known as Mrs. Olivia Yancy, though she has numerous aliases, was a lady of striking appearance, being always dressed in deep mourning, while her pale handsome face and white hair made an unusual contrast to her sable gown. In the spring of last year she landed in New York with a Mongolian holding a grey pelican by a light gold chain. As Mrs. Yancy was apparently a lady of wealth nothing was thought of her strange pet and its keeper, and as pelicans are not upon the tariff lists she was allowed to pass. Since that time the lady has crossed the Atlantic many times, and always carried her pelican with her. On Tuesday last she arrived as usual with the bird, and, having passed the unsuspicious Customs officials, called a carriage and drove away. Since then she has not been heard from. It now appears that Mrs. Yancy was a diamond smuggler, and that the precious stones she brought into the country upon each trip were concealed in the enormous bill of the pelican. The bird carried 30,000dols. worth of diamonds, being a portion of an order of a Chicago house through a firm of New York importers, who claim to have been ignorant of the manner in which the stones were brought into the country. The Chicago house had advanced 10,000dols. upon the diamonds, and were to have paid the remaining 20,000 dols. on delivery. The police are now actively searching for the lady and her pelican.

Random Brieflets.

The applications of photography are increasing daily. Recently a German perfected a process for photographing the internal organs of a living being. How far this will be a success remains to be seen; but it is reported that numerous experiments have been made with it, which are quite satisfactory. Should the possibility of such a thing be established, few greater boons will be accorded the physician.

Electric lighting for fishing is coming much more into operation. The fishermen of San Diego, Cal., have recently introduced the incandescent lights into their nets, which attract the fish, and, moreover, render them visible, so that the men know when to haul. It is said they are making enormous catches.

The Cardiff Corporation have accepted the tender of Messrs. Barry and Son for the erection of a four-faced clock for the Market Buildings at a cost of £42. We hope the advertisement will pay!

The inland revenue authorities are bestirring themselves a bit again, and a number of convictions have recently been obtained for selling plate without a proper licence. Messrs. J. and W. Whitham, Jewelers, of Bingley, were fined £10 and costs for selling a gold albert of 2 ozs. 11 dwts. whilst only holding the minor or 2 oz. licence.

In another case at Liverpool, a retired sea captain, who held the minor licence (and who had been cautioned against selling watches with cases over 2 ozs., and had promised not to do so again), was fined only half the amount of the foregoing. Why this was can, perhaps, be better explained by the respective judges.

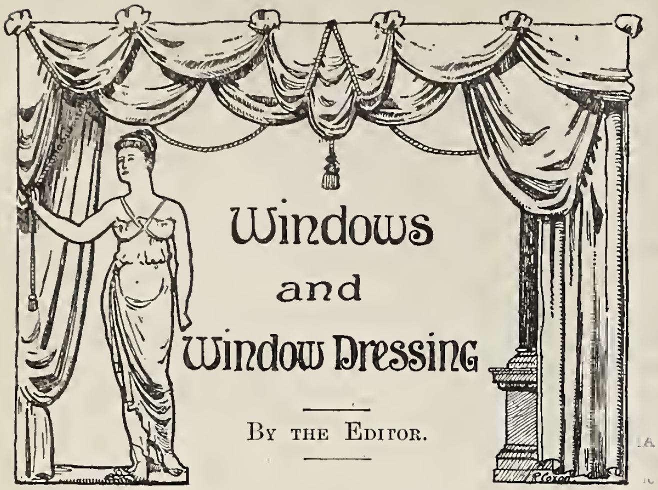
At Falkirk, David Ure, Watchmaker, was fined £2 6s., or fourteen days' imprisonment, for selling a silver chain, his licence having expired in July.

According to the last report of the Marine Department of the Board of Trade the number of persons who presented themselves for examination for masters' and mates' certificates of competency during the year was 4,688. Thirty-two were rejected as not being sufficiently able to distinguish colors out of 600 examined for colors only. Some curious and interesting results are brought out which show how indispensably necessary is this trial of color vision in all who are connected with lights and colors. As an illustration we quote the following:—Pink glass was described by 177 as red, 90 green, 179 yellow, 6 neutral, 3 blue, 7 white, 80 other colors. Bottle green—391 red, 7 pink, 92 yellow, 15 neutral, 4 blue, 5 pale blue, 52 white, 31 other colors.

A youth named Thomas Smith, an apprentice at Mr. Gardiner's, Broad Street, Reading, was cleaning an old-fashioned clock a few weeks ago, when, to his amazement, he discovered seven pounds in gold, wrapped in separate pieces of paper, among the works. Smith forthwith apprised the foreman of the discovery. The clock, it appears, belonged to an old man at Caversham, and after his death the owner (a poor woman) took it to be repaired, and called for it at the time appointed, when she was informed of the discovery. She was greatly delighted with the valuable timepiece and the money it contained, and offered to leave a portion of the treasure for the benefit of those employed at the establishment.

The Eastbourne Town Council have considered a large number of tenders for the proposed Town Hall clock, and it has been decided to ask the Council to accept that of Messrs. Gillett and Johnson, of Croydon, for the execution of the work in all respects as specified for the sum of £700, and that the Town Clerk prepare the necessary agreements.

A visitor, who was fishing off Deal Pier recently, brought up a gold watch and chain on his hook. It is supposed to be one lost off the pier on Bank Holiday last.



Windows and Window Dressing

By the Editor.

It requires no very old man to recall the time when there were quite a number of prominent firms in the trade which considered window display quite beneath their dignity, and it requires no prophet to predict the time when they will belong entirely to the past. One by one, as new blood has been incorporated into those of them which have retained their supremacy, digressions have been made from the old customs, while colossal fabrics have been raised up upon the new lines. It is, however, no more than one would expect that when such firms turned their attention to window-display, they should have produced something out of the ordinary line of things—as much ahead of the rest of the trade displays as they considered themselves in business. I have known a firm to spend £200 upon the fitting up of its windows, and yet be the very people to change their windows the most frequently, and I might add, what is infinitely more important, make the most by them and sell the most from them. Indeed, there are left now only one or two firms whose business is of such a nature as to be able to dispense with window display. We believe the Parisians were the first to realise the importance of reformation, and with the suggestions and assistance of the delicate hand of madame, first learned to appreciate what we conceive to be the first axiom in the display of goods, viz. :—

Every article should be associated by surroundings that do it justice—that distinguish it, that enhance the beauty of its appearance.

Every picture requires a background, every painting a frame, and every figure looks best when gracefully draped. There can be no denying that window-dressing is an art, based upon principles which underlie Art in its higher realms; and although accidental blunderings sometimes give charming results, the same action far more often produces monstrosities, which subvert the very object sought in window display. I am fully aware that after all a great deal turns upon what we call *taste* ; but—

> What then is *taste*, but those internal powers,
> Active and strong, and feelingly alive
> To each fine impulse—a discerning sense
> Of decent and sublime, with quick disgust
> For things deformed, or disarranged, or gross
> In species?

The chief object of these articles, however, is not an essay on the principles of High Art, but the furnishing of a framework for each individual to develop his own capabilities. I shall therefore endeavor to confine myself to practical suggestions, and supply the material with which those results can be obtained.

We need not confine our remarks to the upper stratum of the trade ; it concerns and applies to the very bottom stratum in no less degree. Time was when all that was thought necessary for a watchmaker's display was a dirty window, several rows of old watches, suspended by extemporised hooks from a bar or two, with dirty tabs, bearing the names of the owners. But all this is changed, or fast changing, and one would now only expect to find behind such an exhibition an old son of the Black Forest, puffing away at a huge German pipe. The populace have gradually become repelled by such a state of things, by comparison with that which is developing elsewhere. Remember, nothing in nature stands still, nothing is constant. It is all evolution or retrogression ; and popular taste forms no exception. A state of things which satisfied a quarter of a century ago would now be passed by unnoticed ; and the success of the most successful men of to-day, is to be attributed to their appreciation of the great secret of modern business—Keep pace with the times.

If you are on the lowest round of the ladder, you need not remain there ; nor need you necessarily be dirty and disreputable. Make the best of what you have, and it will soon attract attention, and the attention business.

Perhaps, after all, the most important classes numerically are those which are neither the highest nor the lowest. It is they who represent every phase of the question, starting from the more humble lower, and passing on, by insensible gradations, to the higher. It will, therefore, be necessary to dwell very fully upon this portion of our subject.

Owing to what we regard as our second axiom, or what is, perhaps, only an extension of the first, viz.,

Windows must vary with neighborhoods.

We shall have every neighborhood to cater for, every possible description of window calling for attention, according to its environment and the circumstances of the owner. A class of window which would be tolerated in the Strand or Cheapside might be perfectly incongruous in Bond Street. The class of goods would be altogether different, and necessarily the windows would differ also. An oil painting and a water-color, although equally meritorious, would require frames and mounts of very different descriptions. It is, therefore, not with the object of unduly lauding Bond Street that I point out these indisputable facts. So different is the nature of the trade of certain neighborhoods, and the manner in which it is done, that a man who might be qualified to make a fortune in one of them would be ruined in the other.

Following closely upon this is another axiom, which demands harmony not only with locality but with time.

Let all articles shown be seasonable.

Do not dress a window with salad bowls, soda stands, and ice pails when it is snowing hard ; but with things suggestive of warmth and comfort. From January to December, *specialise*. Always have seasonable specialties. Take advantage of every season that comes round to make a show of *seasonable goods ;* and when there is no season, make one by the introduction of some "novelty"—novelty of article or novelty of price, novelty of any sort or any thing. If you have nothing new, put an old article in a new place. There is always an insatiable desire in the public for something new. Always endeavor to assist the benevolent, they must be appealed to all the year round with christening — birthday — and wedding — presents, "expressions of friendship," "expressions of thanks," and as the seasons roll round, with Christmas presents, new year's gifts, and Easter offerings.

Do not put things into a window in a hap-hazard sort of manner, totally regardless of order.

Settle your plan before you begin.

Have an idea of the effect you are aiming at ; let it have a definite design and order. It need not be symmetrical so long as there is something definite and visible, some result aimed at. It may be confusion itself, and yet a glance may show order and design in the very confusion, and the *tout ensemble* be effective, attractive, and pleasing.

(To be continued.)

Watch and Clock Making.

(Continued from page 52.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making

(II.)—Advanced Paper, 1880.

QUESTION (7).—What method is usually adopted for ascertaining whether a fusee is so cut as to correspond exactly with the varying strength of the mainspring?

Answer.—The object of the fusee is to produce an equal "motive moment" with reference to the great wheel, hence the radii of any point from which the chain leads off should vary inversely as the pull of the spring. To test whether this holds good in any given fusee, a method of "counter moments" is applied to the fusee arbor; that is, a rod, called the adjusting rod, is attached to the fusee arbor, and perpendicular to its axis, with a sliding weight (sometimes two) which can be clamped in any position. The initial position of the weight is so determined that it just balances the pull of the spring on the first turn, and then the pull of the spring at any other point is compared with this one. Generally, within certain limits, the moments of the spring can be made approximately uniform by setting the spring up or letting it down, as the first will diminish the ratio of increase in the pull, and the latter will increase it.

Remarks.—There was a period in the history of watch-making, and not a very remote one, when it was thought that the uniform performance of a watch was secured by the application of a fusee, and inseparable from it. Experience as regards the going barrel has demonstrated that these ideas were not altogether sound, but I think that the conclusions of those who think that everything can be secured from the going barrel that were or can be obtained by the use of a fusee are equally unsound. It is not an uncommon experience that "certificated watches" disappoint wearers. The reason is plainly this: the timing of a watch for vertical and horizontal positions in which the motive power remains constant is a different thing from the timing of one where the latter varies, as in a going barrel; for in that case the tendency to lose during the period of diminished impulse force is greater, and this tendency increases with time; that is, in proportion as the resistance due to friction increases. In a watch which is clean and runs under most favorable conditions, and which is only observed for mean periods, the effect is small, and hence no provisions for this error need be made; but a watch so timed will develop tendencies quite inconsistent with the character earned at the trial. On the contrary, a watch that is timed, with a view to make the time of the vibrations indepedent of the effect of the thickening of oil, must have not only a gaining rate in the vertical positions but one which has a greater gaining rate as the spring develops; but such a provision would cause it to come off second best in the early days of a watch's lease, hence the very thing necessary for correct or good performance has to be neglected for a temporary object, and hence the reason for the experience referred to.

Now in a fusee this secondary liability to variation—that is, by reason of variation of impulse force and consequent energy of balance motion—does not exist with one important exception, and that exception includes all fusees where the pressure on the pivots of the fusee is the sum of the pull on the chain and power transmitted to centre pinion, for with the fusee under such conditions the tendencies to variations as the oil dries up are nearly as great as those referred to in the going barrel—as is proved by the experience of many jobbers, that a lever watch loses as it gets clogged. A fusee should be so arranged, that the chain leads off between the centre pinion and fusee arbor. The advantage of this can be tested in a few seconds, for in the latter case the end-shake of the fusee can be tried with a weak pair of tweezers, but in the former it requires a strong pair of pliers when the spring is wound up, from which the frictional effect on the fusee pivots as time goes on can be readily inferred, and is proved to those experienced in jobbing.

It is remarkable that the experiences as regards the going barrel have brought about no revolution in the mode of English clock-making, for it is more easy to regulate a clock without a fusee than a watch. If the cost of a fusee in an English clock were divided in a little more attention to pinions and pallets, quite as good a result would be obtained, and a number of inconveniences and liabilities avoided, and they would have better chance of competition with imported clocks.

Question (8).—How can an approximately uniform motive force be secured when a going barrel is employed?

Answer.—The only method for securing uniform motive power, that will remain uniform for any length of time, is that due to a mainspring which has a considerable number of marginal turns. The relative radii in a clock or (Marine) chronometer fusee show that the variation in the pull of the spring is less as the force increases, hence if a few of the last turns are utilised only an approximate uniformity is secured. The other various methods resorted to, such as diminishing the thickness of outer coil, softening a portion of the outer end, a pivoted hooking, an oscillating bar, a travelling hook, are all based on coil friction, so that increase of pressure between the coils neutralises the increased pull of the spring. The disadvantage of any adjustment by frictional pressure consists in the fact that it is unreliable, and is subject to immense variation in effect, and therefore all such methods are worthless, for the variations they may, and mostly do, develop are far greater than those they are supposed to neutralise.

Question (9).—Enumerate the successive stages in the action of the Chronomoter Escapement?

Answer.—Starting with the zero point of the balance spring, and the relieving pallet on the opposite side of the detent to that of the relieving spring, as the initial position of the balance, the action is as follows:—The balance moving in a direction opposite to that of the escape wheel, in reference to the line of centres as ordinate, displaces the relieving spring without disturbing the position of the escape wheel, which is blocked by the detent pallet in such a position that the line of centres just bisects the angle contained between two adjacent teeth of the escape wheel. On the return motion of the balance the relieving pallet displaces the detent, and releases the escape wheel at the instant when the impulse pallet has passed within the periphery of the escape wheel, the detent becomes disengaged from the relieving pallet, and returns to its initial position of rest against the stop-screw before the completion of impulse, so as to arrest the escape wheel as it becomes disengaged from the impulse roller. With the termination of the supplementary arc of the balance the action is repeated.

(To be continued.)

*

Beating the Record.

The output of gold from the Witwatersrand is running up now very fast, amounting to 65,601 ozs. for September. In September of 1890 it was 45,467 ozs., so that if things go on at the present rate of increase the prophecy of some will be realised, and the Randt output will figure the grand total of 100,000 ozs. a month. We fear, however, this will not be this year now.

The Crystallography of Gems.

By the Editor.

(*Continued from page* 72.)

The Monoclinic System.—*Continued.*

The Natural Forms of Euclase.

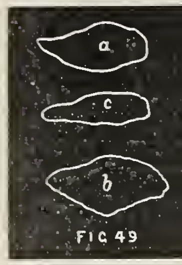


FIG 49

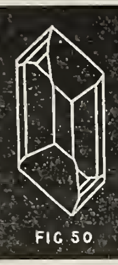


FIG 50

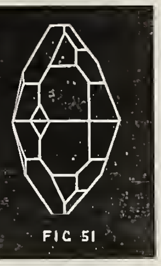


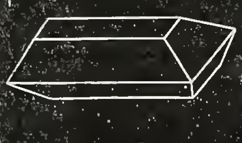
FIG 51

THE Euclase is a rare, but nevertheless beautiful quiet gem, and commands an excessively high price. Its name is derived from two Greek words signifying easily to break. This property of brittleness is one reason why it is so rarely cut. It is a fairly hard gem, and possesses a very high lustre and a color suit ranging from colorless, through yellows, to mountain-green and blue. The most simple forms are prisms on rhombic bases, more or less perfect, but usually somewhat irregular in outline such as a, b, c. Fig. 49.

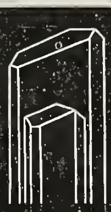
It is usually very deeply striated longitudinally, the striations often obliterating the faces. The majority of crystals well illustrate the result of the inclination of the clinodiagonal axis. Fig. 50 is a splendid example of this; it is from this reason that the basal plane (which in the previously described systems is always at right angles to the plane of the prism) is inclined to it, and instead of standing at an angle of 90°, stands at 79° 44″. And further, it will be seen that domes occurring in the direction of the orthodiagonal axis form hemidomes, which meeting with the basal plane appear to form a pyramidal termination to the crystal. Basal planes do not often occur, but when they do, if a crystal is stood upon one of them, it appears to be toppling over forward; however, that is the natural position of the gem, and bearing this in mind will greatly facilitate the reading of it. The consequence of the orthodomes meeting the basal plane in this manner is a distinguishing feature in this system. The only plane of symmetry being along the clinodiagonal axis, or a plane passing through the vertical and inclined axes; in it faces are all symmetrically disposed. But in any other plane this symmetrical arrangement does not obtain, the faces above the centre differing from those below it, and we get the top faces dissimilar from those at the bottom. Those at the top front are represented at the back of the bottom, and *vice versâ* those at the top back are represented in the front at the bottom. Returning to the description of Fig. 50 we notice the centre prismatic face to lie parallel to the clinodiagonal axis; it is therefore a clinopinacoid. The lines at the lateral extremities show the positions of the orthopinacoids which, if sufficiently developed, would meet the clinopinacoids and form a rectangular prism; but, coming upon what would be the edges of such a prism we get other faces largely developed, and these, we might also remark, if developed to the extinction of the other planes would result in a prism on a rhombic base, the angles or edges of which would cut both lateral axes at unity. There is further another set of prism faces present which come between the edges of the last two, cutting the clinodiagonal axis at a little less distance. The variation of the length of the lateral axes gives rise to many faces on the prism which may or may not be followed by hemi-orthodomes or hemi-octahedra. When the prismatic faces are short, or wanting, crystals assume a very facetted appearance, frequently the faces of quite a number of prisms evenly developed are present, terminated by faces of great regularity such as Fig. 51.

The name Epidote was applied by Haüy to a somewhat large group which, as he said "*à reçu un accroissement*," the base of the prism being longer on one side than the other. The description of these varieties belong rather to descriptive gemmology than crystallography. There is, however, at least one species that is crystallographically distinct, viz., Zoisite. The others include Piedmontite, Allanite, Thallite, Delphenite, Oisanite, Puschkinite, Escharite, Withamite, Beustite, and several others varying from all shades of green through bright emerald green (Puschkinite), yellows, carmines (Withamite), orange red, browns, grays, and whites, their general chemical type being similar, although their respective ingredients vary considerably as well as their physical properties. Ordinary epidote is usually of a characteristic sort of dark bottle or pistachio green, sometimes tinted, at others shaded. Although many forms appear extremely simple at first sight, they do not prove such upon examination, but they are very easily distinguished from any other gem. They are generally extremely lustrous on each of their surfaces, the longitudinal striations sometimes making them quite fibrous in their appearance. Fig. 52 is one of the simple forms, its chisel-shape aspect is very striking, which is even more so in Fig. 53, a form in which whole groups frequently occur, sometimes running down like the steps of a ladder. There is apparently quite an absence of pyramidal faces.

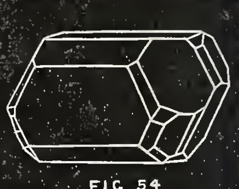
The Natural Forms of Epidote.



FIC 52



FIC 53



FIC 54

The ends present the uniform appearance of having been chamfered off obliquely, in exactly opposite directions, one of which largely predominates. These terminal faces are extremely highly lustrous, and few would realise they had not been well cut and polished, only that the superlative edges are so true and fine. This group, of which Fig. 53 is one, has a quality which I am tempted to mention, viz. its axechroism; in one direction it is a beautiful rich reddish-brown, in another it is yellow, while in a third it is peridot green. But the crystalline forms of this gem are by no means so simple in their entirety; indeed, I cannot call to mind another species that is favored with such an extensive crystallographic literature. Fig. 54 is by no means the most complicated form. They are considered as extended along the diagonal axes, becoming horizontal prisms; the large front face would be an orthopinacoid, which would be inclined to the base. It is a little difficult to see this figure in an outline drawing, but the zigzag line on the right represents the girdle, and faces above and below are pyramidal faces. I might mention that my friend Mr. W. Semmons, "one of the first mineralogists of the day," has recently become the possessor of a group of probably the largest epidotes ever heard of, one measuring over a foot in length.

* * *

A characteristic feature in the month's police-courts is the number of cases where thieves have been stopped by pawnbrokers; but although so plentiful, we suppose they will be quite overlooked by those who regard the Knights of the Golden Balls as little better than fences.

The Diamond Fields.

(By Vaalite.)

PEOPLE now seem once more to be settling down—holiday-making folks are returning by the hundred, and soon we may expect judges in court and legislative assemblies actively engaged. We may then except to know the destiny of what probably concerns most of your readers more than anything else, viz., the Premier Diamond Mine. Owing to the legislation which is still pending, things are practically as they were when I last wrote. Messrs. Ward and Armstrong are finding well, and the powerful operations of Major Wollaston are, if need be, daily emphasising the fact that we have in the Premier probably the richest, and certainly the largest, diamond mine in the world. Major Wollaston is still employing four sets of gear, and in six days he obtained 2,400 carats of diamonds, valued at 28s. per carat; while the price of De Beers stuff is about 24s. Every hundred loads average about 25 carats, or about quarter carat a load. Although this is not a high amount, the material is in such a condition that it can be handled so as not to cost more than one shilling per load. The mine, too, can be worked the cheapest of any, as it contains practically no floating reef, thereby differing from others, especially mines like the St. Augustine. There is an absence at present of large stones, which is possibly owing to their being stolen through the open system of working. Mr. Ward receives 10 per cent. of his finds. A telegram from London was received here the other day, which, although it contained a very startling announcement, did not take the people by much surprise, stating that the De Beers had bought up the claim of Ward for £175,000. Before many hours had passed, however, the secretary of the De Beers out here wrote officially to the paper which published the news, to say that it was perfectly untrue. Since my last the De Beers have held their third annual meeting at Kimberley. Mr. Rhodes being away, the chair was occupied by the next prominent man, viz., Mr. Barnato. He had some stupendous figures to present, and spoke with great confidence of the future of the company, stating that whilst the 20 per cent. which they were now paying was a good dividend, he was sure they would shortly be in a position to pay 30 or 40 per cent. The profits of the year were £1,907,095, and a large reserve fund was being established, which he hoped would soon reach a million sterling, as they had now a cash balance of £717,000, besides setting aside money for the redemption of the debentures due last August and in January, 1894. Estimating the blue in sight at De Beers and Kimberley at 7,000,000 loads, and that on the floors at 1,500,000 loads, he considered it might be recovered as an asset at considerably over £8,000,000. The company had invested in 210,000 shares of the Chartered Company at par, which he thought a very fortunate investment, thus paying a high tribute to the prospects of the Chartered Company, with which they will probably become more and more connected. The De Beers Company have promised a £100 trophy for the Griqualand West Rifle Association. The exhibition of which I have previously spoken is to be known as the South African International, and is pushing along in real good earnest, and promising to be of supreme interest to the colony. The sectional committees have been formed, and all matters connected with the diamond industry bid fair to receive the lion's share of attention. Let us hope, however, that the collections will not suffer, as the diamond exhibit of the Cape Town Museum has, been, I regret to say, bodily stolen.

Prospecting is still going on in many quarters, amongst which I might mention one on the Government estate adjoining Kimberley, where what appears good yellow has been proved.

Luck has fallen upon the Koffyfontein Company, who have found a stone up to 136 weight. You may remember they recently amalgamated. It was on the old Pioneer claim that the stone was found. Jagersfontein still continues to supply a fair amount; during August it produced 7,583¾ carats valued at £13,800, a price it will be seen far in advance of De Beers. Indeed, the excellence of river stones stimulates searchers in the direction of river deposits; accordingly we get numerous accounts of various river deposits, many of which show that work is going on, and that finds are really being made. Work at the North-Eastern Bultfontein continues about the same, turning out about 1,100 or 1,200 carats a week; whilst the increase of blue upon the floors is about ten times as many loads, most of their work being upon re-washings. Things are also looking promising with the Gordon Company again, and it strikes me they are in for something that will turn out well.

Mr. Lawson, M.P., one of the directors of the London and South African Exploration Company, which, as you are aware, is the landlord of several of the large mines, has been out here, but nothing was done by way of granting eases for débris washings or prospecting.

The Gemming and Mining Company of Ceylon.

THE Second Ordinary General Meeting of this Company, which was held at their offices, 183 and 184, Gresham House, E.C., on the 15th ult., manifests how careful one ought to be in entering into any of these gem-mining speculations. This company was started with a nominal capital of £100,000, to work certain gem pits, and in their twelve months' operations they have the sale of £189 11s. 3d. worth of gems to chronicle; while the expenses and cost of labor run into a good size fourth figure. Obviously had it not been for the enterprise of the managers in Ceylon, who turned over a few hundreds in mica and plumbago mining and letting some of the lands for tea-growing, the state of the company would have been disastrous. As it is, they show a deficit on the year's working of over three thousand pounds, and have now practically turned their back upon gem-mining for the present, and hope to develope the mica and plumbago; freely admitting that the natives who work for them are one too much for them, that, do all they can, the rascals will manage to steal the stones. We have previously described these gem deposits as being practically similar to our river gravels, called by the natives *Illan.* This material is dug out, either in open workings or mined for. There are nearly two thousand such workings in the island, and when it is remembered that the natives who work at these are satisfied if they get a couple of meals of rice a day, with the chance of getting hold of a decent stone to make a harvest out of, it is practically impossible for a company, with all its expensive paraphernalia of directors, London offices and officers, to compete with natives who can work under these conditons.

The action brought by Mr. William Cook, jewelers' factor of Birmingham, for £1,500 for slander against Mr. Samuel Wilkinson, jeweler, of Bradford, has resulted in a verdict for the defendant. Readers will doubtless remember that Mr. Wilkinson was under the impression that a ring in his stock bearing a forged hall-mark had been bought of Mr. Cook. It is a pity for all parties concerned a better stock book was not kept.

The Markets.

DIAMONDS.

During the past month the supply of rough brought over into the London market was about up to the usual. There were a few Americans and Russians that bought well, especially the former. The Dutch, who appeared here in large numbers both from Amsterdam and Antwerp, perhaps consumed by far the greater quantity of medium stuff. Prices were fully maintained, except perhaps in the higher grades of stuff, where a little giving way on the part of the sellers was noticeable. Still, for all that, anything at all fine still commands extravagant prices.

In Paris business was fairly brisk during the whole of the month. Americans bought largely in anticipation of a great fall trade consequent upon their phenomenal crops. For this trade the buying was in cut stuff, both brilliants and roses, with, if anything, a slight advance in prices. The Russians also paid a visit to the French capital, and made some important purchases.

In Amsterdam, despite the reports lately circulated to the contrary, all the factories were running full work; indeed, had it not been for the large number of men previously unemployed, or only partially employed, the rush could not have been met; for, as it was, they could hardly get sufficient hands. Unfortunately, however, a number of the diamond cutters are turning their attention to other occupations, so that it is not so easy to get men to meet a rush. The stuff mostly in demand was small and medium for Russia and Poland, not that Poland goes in for many luxuries just now, but the merchants of both the above places have connections in Persia and Northern India, where most other goods find a market. The factories are all still running full time, and let us hope the market will not be over when the goods are ready. Up to the present prices have been a little higher. The limiting of the supply of rough makes all anxious to buy what they can, even if only to cut and sell without a loss. Both France and America have been well represented in the Dutch market for finished goods, and have made numerous good purchases.

SILVER.

Silver opened in October at 45d, which it maintained for a few days, when a fall to 44 3-16ths occurred, and with slight alterations during the whole month remained fairly steady, without altering the second figure; at going to press it was 44 1-8th.

COPPER.

Copper, which begun at £51 5s. for G. M. B., has been "climbing down" ever since, and at going to press was £44 7s. 6d.

TIN.

Tin has been subject to "ups and downs" during the month, commencing at £91 and touching £92, but at other times there was a difference of 30s., standing now at £90 10s.

SPELTER

Spelter has been very constant, averaging £23 10s.

QUICKSILVER.

Quicksilver opened at £7 10s., and has varied from that to £8.

* * *

Owing to overcrowding this month, we are obliged to postpone the continuation of matters commenced last month.

At Bradford Quarter Sessions Edwin Thomas, a hawker was charged with breaking into Nos. 209 and 211, Westgate, and stealing a quantity of jewelry and other articles, and was sentenced to nine months' imprisonment, and two years' police supervision.

British Horological Institute.

At the first meeting of the council of the above Institution after the vacation, the following committees for the ensuing year were formed:—

Class Visitors:—Messrs. T. Hewitt, V.P., C. Dunn, V.P., H. P. Isaac, J. V. Pool, and A. W. Webb.

Repairers' Certificate Committee:—Messrs. J. Bolton, Smith, Bray, and Buggins.

Finance Committee:—Messrs. C. Dunn, V.P., Bray, Bridgman, Desbois, Etchells, Troup, and Webb.

House:—Messrs. Jas. Haswell, H.P. Isaac, and Philip Woodman.

Class Continuation Committee:—Messrs. Buckney, V.P., Dunn, V.P., Howell, V.P., and Barnsdale.

Correspondence Class.—Through the courtesy of the examiners we have been privileged from time to time to see the manner in which this class is conducted, and it is impossible to speak too highly, either of the usefulness or management of it, especially to men in country places away from all centres. This self-imposed task of the examiners is a most arduous one, and their action in entering upon it, heroic. The work is carried out in such a manner as to make one feel envious of them. Those who are desirous of taking advantage of it, and wish to prepare themselves for the forthcoming examination of the City and Guild's Institute in April next in watch and clockmaking, or for the clerical portion of the repairers' examination, should join the class at once. Full particulars will be furnished on application to the Secretary, Horological Institute, Northampton Square, Clerkenwell, E.C.

A new, important, and unquestionably valuable feature added to the classes of the institute this year is one on goldsmiths' work. It will be conducted on Wednesday evenings from 8 till 9, by Mr. Harry Stapelton, and commenced on October 14th. The instruction afforded will embrace the principles and methods of manufacturing the various kinds and styles of personal jewelry; the exhibition and description of the tools generally used; the simpler gold alloys and their solders, together with the various methods adopted in finishing gold work. Special lectures will also be given dealing with the subjects of chasing, engraving and enamelling. The course will also include other information likely to be of special advantage to all engaged in the various branches of the trade. Fee for the Course of Thirty Lectures, 5s. Members of the Institute will be admitted without charge.

Clock and Watch Makers' Asylum.

A special general meeting of the subscribers of the above institution was held, on October 19th, at the Horological Institute, 35, Northampton Square, E.C. Mr. T. Baxter (chairman of the committee) presided at the meeting, the object of which was the election of two male inmates out of a list of seven candidates. A large poll resulted in the selection of Mr. T. J. Gammage, aged sixty-eight, of 7, Clarendon Road, Tottenham, N.; and Mr. R. M. Ball, aged seventy-one, of 31, Sudeley Street, Islington, to each of whom was allotted a house upon the property of the charity at New Southgate. Votes of thanks to the scrutineers and the chairman closed the proceedings.

* * *

At Nottingham Robert Smith, 61, caretaker to Miss Beresford, jeweler, Nottingham, was sentenced to nine calendar months' imprisonment for stealing jewelry, etc., to the amount of £200. It appears that it has been customary upon locking up the shop to put the key in an envelope and place it in the care of Smith, who resided in the upper part of the premises, who, on the last occasion, entered the shop and took out about £200 of goods, and began immediately to pawn them.

Mace for Tunbridge Wells.

A very fine silver gilt mace has just been presented to the Borough of Tunbridge Wells by Aldermen Pink and Jackson. The order was entrusted to Messrs. T. and J. Bragg, of Birmingham, who have carried out the work in their well-known style. The mace is nearly four feet in length, and, following the example of some of the finest ancient maces, it has the Royal arms at the summit, finely modelled and enamelled in proper heraldic colors, while they are again shown on the cover of the vase portion of the head. Around the border of the head come a series of Maltese crosses and *fleurs-de-lis* alternating, similar to those on the Royal crown. The vase part of the head is divided by Gothic canopies, below which come, on the obverse and reverse, the arms of the Borough of Tunbridge Wells, and at the sides the arms of Sussex and Kent, the town being partly in each county. The whole of these arms are given in correct heraldic colors in enamel, and produce a very beautiful effect. Supporting the head from the handle are rich scroll foliations with Tudor roses. There are four knops at various intervals on the handle, all richly decorated; the first and second having a wreath of English oak, while the upper portion of the third one is occupied by the enamelled monogram of the first Mayor (J. Stone Wigg, Esq., J.P.) On the reverse of this is given the inscription, as follows:—"This mace was presented to the Borough of Tunbridge Wells by Alderman Hori Pink and Alderman Philip Jackson. 2nd October, 1891." Between the knops are elaborate scrolls twining down the whole length of the mace, except the portion by which it is to be held. On these scrolls are three flowing series of decoration in *repoussé*, one having the hop plant, as relating to the characteristic production of Kent; another band having emblems specially relating to the fruit which is so abudantly produced in the county; while the third has a combined representation of the town and the two counties in which it is situated, viz.: The Lion emerging from a well, having a fountain in his paws, forming the crest of the Borough; the Esculapian staff, symbolic of the art of healing, and relating to the town as a health resort; the Flying Horse of Kent and the Five Birds of Sussex. The mace is placed in a very handsome oak case.

Discovery of Valuable Pearls.

The Western Australian Pearl Fisheries, which have developed so largely of late years, especially since the time when the attention of Messrs. Hayse, Chippendale, and Harry Streeter was first directed towards them, have lately been producing some very fine gems. A telegram states that "some pearls have been found valued at £1,000." Whether this means the sum total of the find, or that more than one has been found valued at £1,000 each, we cannot say; probably, however, the latter is the case. We have seen several from here which realised more than this, and recollect a very fine one found in the early days of the bank, that was simply perfect. It weighed 30 grains, and realised £1,000 in the trade, being afterwards bought for the virgin necklace of the Czarina.

The Idaho Opal Mining Company.

A Company has now been formed to work the Opal Mines of Idaho, the discovery of which we announced at the time. One opal recently taken weighed 93 carats, and is claimed to be of exceptional beauty and hardness. Several New York gem dealers are connected with the enterprise, but they have a colossal task to eclipse in quality the late finds in Queensland, which we unhesitatingly say are the finest the world has ever seen.

Items of Interest.

The Watch Trade in New Zealand. In May last we were informed that 200 sets of interchangeable movements had been sent out to Gore to be made up into watches. One of our subscribers informs us that we were misinformed, although we thought our information was not likely to be so. He tells us that he sent from Gore an order for "200 pairs of blanks, or watch plates, and other rough metals and materials—not 200 movements—to make into watches at Gore, on an interchangeable system," which he has worked out himself. He regards this as marking a new industry in New Zealand, of which he, no doubt, justly feels a little jealous.

* * *

An Aluminum Boat. Interesting experiments have recently been made on the Lake of Zurich with a boat built entirely of aluminum. The boat weighs only about half a ton, or about half the weight of an ordinary boat of the same size, It was built at the works of Messrs. Escher Wyss and Co., of Zurich, the metal having been furnished by the Aluminum Works, of Schaffhausen, where it is obtained by an electrolytic process, the dynamos being driven by turbines, which utilise the water power of the celebrated falls of the Rhine, so that the boat is claimed to be exclusively the product of Swiss labor and power. It carries eight persons, and, with a petroleum engine of only two-horse, easily makes six miles an hour. Aluminum not being subject to rust, the permanent color of the boat is a beautiful dull white, while the chimney, being of polished aluminum, shines like silver. The trial trips of the boat were eminently successful, and it is anticipated that the construction of aluminum steamers, having the same capacity and only half the weight of the iron ones now used on Swiss lakes, has a great future before it.

* * *

Electric Rock-boring. It appears that Mr. Edison has for some time turned his attention to the wants of the mining engineer, and amongst other things has produced an electric rock-boring drill. It is said to be able to bore into the hardest rocks at the rate of three inches a minute; even if the figures were reversed it would be a valuable invention. We have often wondered why electricity has not been employed for this purpose before, seeing how eminently it is suited for sharp, quick percussion, and its application must completely revolutionise mining work.

* * *

The Merchandise Marks Act. Although most of the British Colonies possessing legislative powers have adopted this Act, few appear to be enforcing it very rigidly. In this, however, Hong Kong differs, in that they have ordered the Superintendent of Customs to use every effort to enforce it, giving him exceptional powers to do so.

A lady, who for some years has carried on the business of a diamond broker in the Rue de l'Université, is being sought after actively by the police, she having disappeared from her usual habitation, together with 56,000f. worth of precious stones, the property of other people. Several diamond merchants had lodged valuable parcels of gems with this unscrupulous person, and one of them, not feeling quite sure of her trustworthiness, sent a clerk to request her to return the valuables. The fair broker asked the young man to sit down, vanished into the next room, and thence downstairs into the street, taking with her diamonds belonging to three different dealers.

Things New and Noteworthy.

A Lantern Microscope.

MR. R. G. MASON, Manufacturing Optician, of 69, Park Road, Clapham, has just patented a lantern microscope, which beats its competitors both upon their own merits and also by incorporating several new and important features. It is due to Mr. Mason to say that he has discovered a solution to the difficulty which is the worry of the scientific lecturer's life, viz., of having an oxy-hydrogen lantern and an ordinary student's microscope combined. This is the distinguishing characteristic of the invention, and one which is claimed to be entirely unique. The method of converting the lantern into a table microscope is to slide the former (the bulkier portion of Fig. 1) off its fitting and substitute the stand depicted in Fig. 2. This stand is furnished with the usual apparatus, which, of course, is varied according to the requirements of the purchaser. It will be noticed on glancing at the stage that a new form of clip has been introduced, which is worked by simply pressing down the projection in the transverse rod, the clip being thus raised. A firm hold of the objects is given by the spring underneath. The labels of the slides are not scratched with this clip, and this is the reason (and a good one) for its introduction. The instrument is specially adapted for photomicrography, and therefore the milled head is grooved to take a small band. Another advantage is that any ordinary microscopic objective may be used, but the special objectives made with very large apertures give the more brilliant results, the definition being clear to the edge of the field. Mr. Mason does not claim that his instrument is specially adapted for the use of oil, but oil will be found to be good enough for photographic purposes, whilst in lantern work very satisfactory results may be obtained with small discs. The prices for it are less than those of any similar efficient instrument in the market.

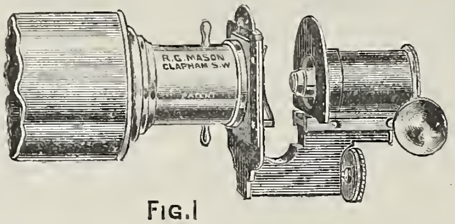


FIG. 1

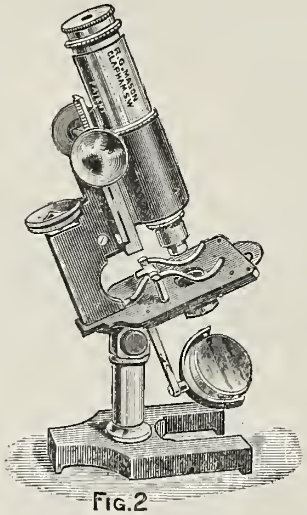
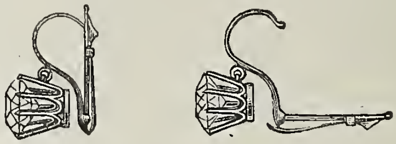


FIG. 2

Great Improvement in Lenses.

Anything connected with the name of Dallinger naturally suggests to one's mind a thing of sterling value. Of such is the recent invention of Mr. T. R. Dallinger, tabulated in our monthly list of applications for patents. Although its specification is not yet published, we are informed that it will be one of the most important improvements that have ever been made in long distance photography. Seeing the millions of stars that yet remain to be taken, a great work may lay before the new lens. Photographing birds and animals in a wild state by the present methods involves great difficulties, which are entirely overcome by the new invention.

Non-tilting of Diamond Earrings.



This month we give illustrations of another invention recently brought out in America, for which a patent has been applied. Its object is to keep a diamond earring upright in position without affecting its mobility, while it enters the ear with perfect ease, is quite safe when once in position, and entails the least amount of necessary manipulation. A glance at the engraving shows the principle of its construction. Behind the upright back is a spring which causes it to press tightly against the wire when closed. It is probably the easiest managed thing that has been brought out. Improvements could be made in it; for instance, the spring might be made to bolt over the "head" of wire.

A Useful Catalogue.

We have before us the new catalogue of Messrs. J. Goode and Sons, occupied chiefly with what we shall perhaps always associate him, viz., chain work, amongst which are a great many comparatively new designs. There are over fifty patterns of gent's alberts, and large quantities of ladies' of every description, down to our old friends, long guards. Chain fittings, eye-glass chains, and other specialities claim a space in this handy and useful catalogue; handy because there are so many things illustrated in it, and useful because it is printed with no name or prices. The printing, blocks, and general get-up are very creditable, and it is a pattern for many others to follow.

IN England it is said the increase of silver trade is due to the repeal of the duty, but all round the American factories the same proportional increase of solid silver over plated ware is being experienced. It cannot be the repeal of the duty that has caused the increase in America—Americans don't believe in repeal of duties, but of putting almost suicidal ones on. Daily events are transpiring that are beginning to shake the faith of what were a short time back staunch McKinleyites. Mr. A. Klein, of Chicago, recently imported a garnet set at the value of 275dols. The New York appraisers, however, considered them worth 430dols., and he was therefore charged upon the penalty clause of two cents. for every dollar under valuation, which brought up the little bill to 670dols. ! ! ! This was too much for human nature, and so Mr. K. abandoned his claim and let Uncle Sam keep the garnets!

In and Out the Courts.

A VERY important case came up at the Mansion House, on October 21st, in which Mr. Maurice Woolf, of 7, Alvington Crescent, Dalston, and 16, Norton Folgate, City, attended before Mr. Alderman Davies on a summons, at the instance of Her Majesty's Board of Customs, for having unlawfully made a declaration under the Statutory Declarations Act, 1835, well knowing it to be untrue in a certain material particular. He pleaded "Not guilty." Mr. W. R. M'Connell and Mr. Macklin, instructed by the solicitor to the Customs, were counsel for the prosecution; Mr. Fillan for the defence. Mr. M'Connell, in opening the case, said under the Revenue Act, 1883, it was provided that all gold and silver plate imported into this country should be entered to be warehoused and deposited in a bonded warehouse, and should not be delivered for home use until assayed, marked, and stamped according to law. Other provisions related to the assaying and stamping of the goods, if of standard quality, and there was this enactment—that plate imported for private use, and not for sale, should be exempted upon proof by statutory declaration being furnished to the satisfaction of the Commissioners of Customs. It was alleged that the defendant made a statutory declaration before Mr. William Carter, a commissioner of oaths, in Idol Lane, that a certain box of foreign plate, which he had imported from Amsterdam, was for his own use, and not for sale, and that, having thus obtained the delivery of the goods to him, he, contrary to that declaration, sold the plate, or portions of it, to Messrs. Jones and Co., of Long Acre. Evidence in support of the opening statement was given. It seemed that the box of plate contained 160 articles, and that the defendant declared that they were solely for his own use or for presents, and not for sale. The Customs officers remarked upon the similarity of many of the articles, and the defendant said he had purchased them in Holland for 2,000 guilders, and that he was obliged to buy the whole case in order to get the particular articles he wanted. The defendant was allowed to remove the plate, but the Customs officials, unknown to him, placed certain marks upon it which enabled them to identify it again, and, being suspicious, they also had his premises watched. It was proved that the plate was subsequently sold in two parcels to Messrs. Jones and Co., silversmiths and plate dealers, at 19, Long Acre, for £289, the defendant representing that he was the agent of a dealer in Amsterdam. Mr. A. W. Starkey, a Custom-house officer, deposed that, in consequence of information that the defendant was offering Dutch plate for sale to a Mr. Davis, he visited the premises in Norton Folgate, and, representing himself as Davis's agent, he was shown the plate for sale, and subsequently purchased, on behalf of the Customs authorities, various articles for £19, which he produced. Afterwards he proceeded to Messrs. Jones's premises and saw other plate of the same kind. It was stated that the plate in question was not up to the English silver standard, but was below it to the extent of one ounce in the pound troy. At the close of the prosecution, Mr. Fillan submitted that his client had committed no indictable offence. Mr. Alderman Davies thought otherwise, and committed the defendant for trial at the Central Criminal Court, admitting him meanwhile to bail.

JULIUS SPITZELL, 27, a broker, who was found guilty last Sessions of obtaining from Lippman Prolick a quantity of diamonds and other articles, of the value of £3,500, was brought up for sentence. Mr. Besley said that sentence was postponed to enable the prisoner to give information as to the whereabouts of the diamonds, as the loss of them meant absolute ruin to the prosecutor and others concerned. The Court would remember that the prisoner pretended to have lost the diamonds as he was riding on an omnibus. The only answer, however, which the prisoner or his friends would give now as to the diamonds was that the prisoner was innocent, and that the jury had taken a wrong view of the case. The accused and his brother had obtained another parcel of £2,500 worth of jewels from abroad. They were received by the prisoner, and had been consigned to another member of the family in Australia; but the parcel had been seized by the Postmaster-General, under a Colonial Act, and the accused and his brother had been joined in the proceedings which had been instituted. The recorder sentenced the prisoner to three years' penal servitude.

ALFRED MARSHALL, 44, pleaded guilty, at the Old Bailey on October 23rd., to stealing £3,000 worth of watches from the South-Eastern Railway Company, and Robert Leigh, 27, a publican, was indicted for receiving the property.—In opening the case, Mr. Deering stated that for facilitation of the transmission of watches between Switzerland and this country, parcels were received by an agent at Bale, who transmitted them direct to Messrs. Storkwell, of Cheapside, who distributed the packages to those for whom they were intended. Messrs. Storkwell were in the habit of sending a van each morning to the railway station, London Bridge, for the packages, and on August 24th a van driven by a man named Tillard entered the station, and addressing the booking-clerk in a familiar manner, said he had come for Storkwell's parcels. Accordingly forty-five packages were handed to him, and he drove away. When, later, the right carman appeared, the robbery which had been perpetrated was discovered. Tillard was subsequently joined by the prisoner Marshall. The property was ultimately found by Inspector Thick and other officers.—It was urged on behalf of the prisoner Leigh that he had no knowledge whatever that the property was stolen.—The jury found the prisoner Leigh guilty. Marshall was sentenced to seven, and Leigh to four years' penal servitude.—The police were highly commended by his lordship.

AT Prescot Petty Sessions, on October 20th, before Messrs. A. R. Gladstone and F. Stapleton-Bretherton, Samuel Nelson, of Liverpool, and Edwin Fisher, William Baker, Walter Watts, and Charles Wood, of Coventry, were summoned, under the Employers and Workmen Act, by the Lancashire Watch Company, for leaving their work without notice. In each case the company claimed £1 as compensation. Mr. H. P. Walker, from the office of Mr. W. Tyrer, prosecuted. It appeared that the defendants were pivot-makers, and according to the evidence of Mr. Stephen Farren, of Coventry, an agent of the Lancashire Watch Company, the defendants were engaged by him to work for the firm. They each signed the usual contract of work, and all turned up at the watch factory. Wood and Watts promised to commence on the day following their attendance, but they had never been seen there since. The other defendants had worked several days and then left. All the defendants, with the exception of Nelson, admitted their liability and promised to pay the amounts demanded. Nelson denied having signed any contract to work, but the agreement was produced in Court. The bench intimated that the defendants were bound to fulfil their contracts or pay the penalty. They ordered each defendant to pay the amount claimed, with costs.

SEVERAL club and deferred payment cases have been brought forward lately. In one case a working man complained to Mr. Fenwick of the conduct of a watchmaker. He stated that early in April he commenced to pay off a watch, the price of which was to be £2 12s. 6d. After he had paid instalments amounting to £1 the applicant fell out of work, and for some time was unable to continue the payments. A few weeks back the applicant went to the watchmaker and wanted to resume the payments, but he was informed by him that he had forfeited the £1 by discontinuing his payments. Mr. Fenwick referred the applicant to the county-court.

At Leicester Town Hall a very serious charge has been preferred against William Jobson, jeweler, 1, Haymarket, of conspiring with J. W. A. Redhouse, and obtaining by false pretences from Robert Howard Constantine, jeweler, Birmingham, a number of gold rings and brooches, value £47 5s. 6d., on July 23rd. Mr. Sills (barrister) appeared to prosecute, instructed by Mr. J. T. Hincks, and Mr. J. B. Fowler defended. Mr. Sills said he appeared to carry on the prosecution of the case. It appeared that Redhouse was in the employ of Jobson, and was dismissed. They were afterwards found to be working together to defraud tradesmen by means of the "long firm" system, and they succeeded in victimising several jewelers to the extent of about £1,000. Nearly all the goods Redhouse obtained on credit found their way to Jobson. They were not entered in Jobson's books, but he kept them secret. He pawned some of them, sometimes in fictitious names. In one case, finding the game too hot, he redeemed an article pawned in Leicester, and pawned it again the same day in London. He also sent to a brother in Lincoln a box containing a vast quantity of valuable jewelry, all of which had been identified by victims in Birmingham and elsewhere as having been obtained by Redhouse on credit. They had been obtained on the strength of the character Jobson forwarded to the tradesmen from whom Redhouse obtained the goods. With the exception of about £25 worth, none of the goods had been paid for, and were not likely to be. Numerous witnesses were then called who had been made victims, and ultimately, after a protracted hearing, the defendant was committed to the Assizes.

In the Pontypridd County-court, I. Shaterio and Co., jewelers, Treharris, sued John Jones, of the same place, for £3 15s., balance of instalment due upon a watch, valued £5 10s., purchased by the defendant. A deposit of £2 had been paid on the watch, which, the defendant alleged, had been subsequently taken away on the plea of repairing it, and an inferior article, valued at £1 18s., left in its stead. The original watch had never been restored. Plaintiffs alleged that the watches had been exchanged at defendant's request, but this the latter denied. Judgment for the defendant, with costs.

Thomas Jones, *alias* Smith, *alias* Professor Jones, living at the back of 19, Tenby Street, was charged with stealing a quantity of scrap silver, the property of Walter William Cashmore, manufacturing jeweler, of 26, Hockley Street, Birmingham. The prisoner is in the employ of the prosecutor, and the latter, in consequence of information received from the police, marked a quantity of scrap silver. That silver was missed on Wednesday evening, and it was subsequently found in the possession of the prisoner by Detective-Inspector Monk and Detective-Sergeant Taylor. There was a previous conviction against the prisoner, who was committed to the Sessions for trial.

At Bradford Borough-court, on October 10th, George Gorell, 20, clerk, Belgrave Place, pleaded guilty to a charge of having stolen a bag, containing £70 worth of jewelry, the property of Mr. T. Mellor, wholesale jeweler, Manchester. The bag had been left by Mr. Mellor under a table in the smoke-room at Hartley's Hotel, Ivegate. Mr. A. V. Hammond, who appeared for the prisoner, pleaded in mitigation of punishment that this was a case of sudden temptation. The prisoner, who had been out of work for two years, was of respectable parentage, and this was his first offence. The Stipendiary Magistrate said it might be a case of yielding to sudden temptation, but the Bench could not inflict a less punishment than six weeks' imprisonment with hard labor, and censured the prosecutor for his carelessness in leaving the bag in a public room, and declined to allow him any expenses beyond third-class railway fares.

At Manchester two boys who have been carrying on an extensive system of pilfering from jewelers' and other shops, were sentenced to three months' imprisonment. Their parents, who appeared respectable people, stated they thought the boys were in situations, as they brought them their money regularly.

In the same city numerous windows have been broken by means of a catapult, and jewelry and other valuables abstracted therefrom. Four of the thieves are now in proper keeping.

At Bristol Police-court James Develsing, a young man, was sentenced to four months' imprisonment for shoplifting. Mr. C. Kemp, jeweler, of Union Street, said the prisoner was in his shop three-quarters of an hour, and that he subsequently missed a watch; as soon as he did so he locked the door, charging the prisoner with the theft. The watch was afterwards found in the prisoner's sock. The prisoner had also paid a visit to the Bristol Goldsmiths' Alliance, and a £35 gold watch fell from his trousers as he was leaving the shop, from which, however, he was allowed to escape.

At the last City of London Sessions (Clerkenwell), before Mr. Warry, Q.C., Walter Smith, the young man who managed, by an old trick, to obtain possession of two diamond rings, was found guilty. According to the evidence, the prisoner went to the jewelry shop of Messrs. Hawes, pawnbrokers in Cranbourn Street, Leicester Square, and asked them to send two diamond rings to an address in Market Street, Paddington, that he might choose one for his wife. On July 22nd a boy was sent with the rings. He was shown into a bedroom, where he saw the prisoner, who took the rings from him and left the room, saying that he was going to show them to his wife. The boy waited for some time, but the prisoner did not come back; and the boy did not see him again until after he was arrested, on September 16th. Detective-Sergeant Martin said the prisoner was a laboring man, and sometimes worked as a stonemason, but was very often to be seen outside the Criterion in dress clothes. The prisoner was sentenced to twelve months' imprisonment with hard labor.

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Distinguished foreigners visiting Sheffield are generally trotted round the works of Messrs. Joseph Rodgers and Sons as being typical of the cutlery trade of the town. This is probably the reason why Buffalo Bill's Indians were recently "personally conducted" round that establishment. They watched the processes of manufacture in the different workshops with more or less intelligent interest; but their delight culminated in the plating-shop, where medals and other trinkets which they possessed were immersed in the vats, and came out silvered or gilt, as the case might be.

Curious Discovery of a Lost Ring.—Early last spring a lady in Lockerbie lost a finger ring of massive gold, and as the article had been in the family for generations she was naturally much grieved at its loss. Long searching in all likely places failed, and the ring was ultimately given up as utterly lost. Last week, however, some potatoes were lifted in the garden, and from the side of one of them a bright gleam was seen, and to the immense surprise of everyone concerned this was found to be the missing ring protruding from a depression in the potato, whose expanding growth had almost entirely embedded it. The lady is keeping the potato as a curiosity. It can only be surmised that the ring had been lost in the byre, whence manure to put to the potatoes had been brought at planting time, and that the ring had thus been placed in the potato furrows. In the many instances on record of rings lost and recovered, this is certainly one of the most singular.

Gazette.

Bankruptcy Record.

Bradley, S., and **Company** (Samuel Bradley, trading as), 27, Frederick Street, Birmingham. The liabilities in this case were put at £830 14s. 10d., and the assets at £166 12s. 7d., leaving a deficiency of £664 2s. 3d. The bankrupt commenced business in 1869 as a wholesale jeweler, at 9, Augusta Street, without capital, and in October, 1887, filed his petition, with liabilities at £17,393 10s. 11d., and assets £3,359 9s. 10d. A dividend of 3s. 9d. in the pound was paid, and on the 15th of March, 1888, bankrupt was discharged conditionally upon consenting to judgment being entered against him for £1,200. Nothing, however, had been paid on account. In June, 1888, he started again, at 26, Frederick Street, in the same business, and without capital. He borrowed £20, which he paid on account of the cost of the fixtures, £55, and gave a bill for the balance. For eighteen months he acted as agent for the Swiss Watch Company; but the agency proved unprofitable, and he gave it up. Since Christmas, 1889, he kept no banking account. He had £119 advanced on jewelry, which he pledged owing to pressure for money. The examination was adjourned.

Clarke, Philip Wright (trading as H. W. Clarke and Co.), 1, Lowther Road, Liverpool Road, Islington, London, N., and 103, Hatton Garden, London, E.C., Jeweler. First meeting: 33, Carey Street, W.C., Oct. 8th. Public examination: 34, Lincoln's-Inn-Fields, W.C., Nov. 11th.

Principal Creditors:

		£	s.	d.
Apps, T. R. B....	London	120	0	0
Beaton, R.	,,	175	0	0
Elgood,—	,,	60	0	0
Fournier,—	,,	170	0	0
Haas, F.	,,	455	0	0
Jarvis, W.	,,	320	0	0
Mayer and Fudder	,,	163	8	6
Page,—...	,,	125	5	0
Stevens,—	,,	124	11	10
Heckford,—	,,	92	0	0
Fully Secured Creditors.				
Lancaster,—	London	1,370	0	0
Wallace, C.	,,	1,300	0	0
Partly Secured Creditor.				
Clark,—...	London	354	12	0
(Estimated value of security, £13.)				
Preferential Creditor...		30	0	0
Liabilities on Bills, etc.		35	0	0

Isaacs, Edwin, 79, Marylands Road, Paddington, W., and **Wulfson**, Albert, 45, Cotleigh Road, Kilburn, Wholesale Opticians, late trading as the English Optic Company, 35, Hatton Garden, London, E.C. Receiving order: Oct. 16th.

Jeffreys, J., and Co., 179, Aldersgate Street, London, E.C., Fancy Jewelers. The Official Receiver has issued the accounts under this failure. The capital of the firm appears to have consisted of certain patents, to depreciation in the value of which, supplemented by want of capital and badness of trade, the failure is attributed. The debts are returned at £390 18s. 6d., and the assets at £239 9s. 2d.

Lesser, Solomon, 3, Alfred Place, Bedford Square, W.C., late 19, Frith Street, Soho, and 54, Shaftesbury Avenue, London. W.C., Jeweler, now out of business. Receiving Order and Adjudication: Oct. 2. First Meeting: 33, Carey Street, London, W.C., Oct. 27. Public Examination: 34, Lincoln's Inn Fields, Nov. 13.

Moulson, Frederick, 5, Belgrave Street, late Tenby Street North, Birmingham, Jeweler, now out of business. Receiving Order: Oct. 2. First Meeting: 25, Colmore Row, Birmingham, Oct. 28. Public Examination: County Court, Birmingham, Nov. 18.

Strawbaum, Maurice, 14, Reservoir Street, Reservoir Road, Edgbaston, and 33, Tenby Street, Birmingham, Jeweler. Receiving order: Sept. 25. Adjudication: Sept. 28. First meeting: 25, Colmore Row, Birmingham, Oct. 14. Public Examination: County Court, Birmingham, Sept. 29. A meeting of the creditors of this debtor was held on the 14th inst., at Whitehall Chambers, Colmore Row, Birmingham, before Mr. L. J. Sharp (Official Receiver). The statement of affairs showed liabilities £604 3s. 8d., with a deficiency of £552 12s. 11d. The bankrupt commenced business in April, 1889, as a Jeweler, with capital amounting to £150. He had previously been engaged as a journeyman jeweler. During the five months preceding the receiving order, bankrupt stated that he had pawned with Messrs. Wood, of New Street and High Street, gold watches and finished jewelry estimated at £200. About six weeks ago bankrupt destroyed the whole of the tickets. Bankrupt stated that on the 16th ult. he locked his safe and warehouse at mid-day and went to dinner, taking the keys with him. On his return he found the warehouse and safe doors open, and his entire stock and cash, which had been in the safe, had disappeared. The cash amounted to about £65, and stock to £350. Bankrupt was aware about a month before the robbery that there was a deficiency, but believed it to be only slight. The insolvency was attributed to robbery, insufficient profit in consequence of having to sell for cash, and bad trade. Bankrupt's wife had a policy for £1,000 effected upon her life for her husband's benefit. The case being a summary one, the Official Receiver was constituted trustee.

Westmore, James Henry, 1, Church Street, Ventnor, Isle of Wight, Watchmaker and Jeweler. Receiving order and adjudication: Oct 17.

Young, George Herbert, 129, Somer's Road, Southsea, Watchmaker. The debtor's statement of affairs showed liabilities of £207 9s. 6d. to unsecured creditors, and nett assets to the amount of £66 12s. 10d., leaving a deficiency of £140 16s. 8d. In answer to Mr. Hunt, the debtor said he had been nearly four years in business. He started with a capital of £22 or £23, which had been raised by his wife through the sale of a piano. Of this amount he paid £12 for the goodwill of the business, and the remainder for fittings and stock. Thus he practically started business without capital. The examination was closed.

Deeds of Arrangement.

Beresford, Matilda Eliza, 31, Market Street, Nottingham, and Swiss Cottages, Chilwell, Jeweler. Trustee: Thomas Leman, Nottingham, accountant, with a committee of inspection. Secured Creditors, £150. Dated Oct. 3; filed Oct. 10. Unsecured liabilities, £972 19s. 6d.; estimated net assets, £1,528.

Cohen, David, 96, Elizabeth Street, Cheetham, Manchester, Watch Dealer and Jeweler. Composition of 7s. 6d. in the £, payable 1s. 3d. on Oct. 11, 1891; 1s. 3d. on Jan. 11, 2s. 6d. on May 11, and 2s. 6d. on Sept. 11, 1892. Secured by three guarantors. Dated Oct. 5; filed Oct. 10. Unsecured liabilities, £1,005 3s. 6d.

Principal Creditors—

		£	s.	d.
Britton, B. H , and Sons	Birmingham	89	11	2
Hill, Thomas, and Co.	Coventry	149	16	6
Cohen, Philip ...	,,	237	4	10
Kinder, Thomas	,,	74	17	6
Hawley, John, and Sons	,,	190	6	6
Wright, L. J., and Co.	Manchester	168	0	4
Makin, George...	,,	71	6	4

Fenton, M. (trading as Alfred Matthew Frost), St. George's Road, Preston, Lancaster, Watchmaker and Jeweler. Trustee: William P. Meagher, 18, Cannon Street, Preston, Lancaster, Accountant. Dated Sept. 25; filed Sept. 30. Unsecured liabilities, £225 2s. 4d.; estimated net assets £40

Principal Creditors:

		£	s.	d.
Lewis Brothers	Birminghan	90	5	4
Makin, G.	Manchester	65	0	0

Swingewood, William Harrison, Ombersley Road, and at 33, St. Paul's Square, Birmingham, Jewel-case Maker. Trustee: Walter G. Blackham, Corporation Street, Birmingham, Accountant. Preferentail creditors, £11 7s. 4d. Dated Oct., 12; filed, Oct. 19. Unsecured liabilities, £400 5s. 7d.; estimated net assets, £101 4s. 2d.

Principal Creditors:

		£	s.	d.
Swingewood, A.	Birmingham	30	6	6
Massie and Singleton	Manchester	100	9	11
Goodie, George	,,	42	0	0
Skelton and Co.	Small Heath	40	0	0

Thorp, James John, 82, North End, Croydon, Surrey, Watchmaker and Jeweler. Dated Sept. 23; filed Sept. 28. Unsecured liabilities, £683 3s. 10d.; estimated net assets, £660 0s. 0d.; secured creditors, £40. Trustee: C. H. Phillips, 11, Rose Street. London, E.C.

Principal Creditors:

		£	s.	d.
Blanckensee and Son...	Birmingham	435	13	10
Roberts, G.	Charlton	106	0	0

Tranmer, Herbert 20, Tadman Street, Hessle Road, Hull, Jeweler's Agent. Trustee: William Elvin, Walmsley Street, Hull, Jeweler. Dated Oct. 6; filed Oct. 12. Unsecured liabilities, £340 9s. 8d.; estimated net assets, £350. The principal creditor is Mr. William Elvin, Hull, with a claim of £294 12s. 7d.

Walker, Christopher, 72, Middle Row, High Street, Skipton, York, Watchmaker and Jeweler. Trustee: John Alderson, Skipton, Auctioneer and Valuer. Dated Sept. 28; filed Oct. 3. Unsecured liabilities, £568 14s. 10d.; estimated net assets, £104.

Principal Creditors:

		£	s.	d.
Griffiths and Sons	Birmingham	165	0	0
Abrahams, J. F.	Bradford	71	4	11
Rosenthal and Son	Manchester	116	10	0

Company Matters.

Aqueous Works and Diamond Rock Boring Company, Limited.—Resolution passed Sept. 2, confirmed Sept. 30:—That it is desirable to reconstruct the company; and that the liquidator be, and is, authorised to consent to the registration of a new company.

Bear Creek Gold, Limited.—Meeting: Company's Offices, 1, Leadenhall Street, London, E.C., Oct. 22, for account of the voluntary winding-up.

Central Argentine Gold Fields, Limited.—Resolution passed Sept. 9:—That the company be wound up voluntarily; and that John Henry Tilly, 37, Queen Victoria Street, London, E.C., Accountant, be appointed liquidator. Claims to above by Dec. 7.

Divisadero Gold and Silver Mining Company, Limited.—A petition for winding-up was presented on Oct. 2, by Frederic Barnes and Company, 109, Fenchurch Street, London, E.C., export hardware merchants; and is directed to be heard before the Vacation Judge, Mr. Justice Jeune, on Oct. 14. Phelps, Sidgwick, and Biddle, 18, Gresham Street, London, E.C., solicitors.

Goldfields of North Queensland, Limited.—Resolution passed Aug. 12, confirmed Sept. 13:—That the company be wound up voluntarily; and that William Henry Fox be appointed liquidator.

Gorton, S. and B., Limited.—Resolution passed Sept. 7, confirmed Sept. 25:—That it is desirable to reconstruct the company, and that for this purpose the company be wound up voluntarily; and that Thomas James Mercer, Coventry, watch manufacturer, be appointed liquidator, and authorised to consent to the registration of a new company, to be named Gortons, Limited.

Ripanyi Quicksilver and Silver Mines Company, Limited.—Meeting: 12, King Street, Liverpool, Nov. 17, for account of the winding-up.

St. George (Queensland) Gold Mining Company, Limited. Resolution passed, Aug. 5; confirmed, Aug. 20.:—That the company be wound up voluntarily.

Silver Bell Mining aed Smelting Company, Limited.—A petition for winding-up was presented on Sept. 26, by Elizabeth Mary Douglas Norman, Temple Chambers, Temple Avenue, and is directed to be heard before the court on Oct. 14. Thorneycroft and Willis, 59, Chancery Lane, London, W.C., solicitors.

Upper Roodepoort Gold Mining Company, Limited.—Claims to Henry Goodier Turner, Arthur Hibbert, and Abraham Levy. Liquidators, care of McDiarmid and Teather, 5, Newman's Court, Cornhill, London, E.C.; solicitors, by Nov. 2.

Bills of Sale.

Lippold, Conrad John, 46, Cologne Road, Clapham Junction, Surrey, Journeyman Watchmaker and Assistant. To Central Advertising Corporation. Dated Oct. 15; filed Oct. 19. £30.

Martindale, Alice Jane, 7, Carey Place, Watford, Hertford (wife of William Martindale, same address), Jeweler's Assistant. To William W. Freeman. Dated Oct. 5; filed Oct. 10. £50.

Pawsey, Harry, 38, Park Road, Clapham, S.W., Watchmaker and Jeweler. To South West Investing Company. Dated Sept. 24; filed Sept. 30.

Rescorl, Philip, 51, Church Street, West Bank, Widnes, Lancaster, Watch Dealer and Jeweler. To Widnes Investment and Banking Company. Dated Oct. 5; filed Oct. 6. £30.

Turner, John Charles, 142, St. John Street Road, Clerkenwell, London, E.C., Clock Manufacturer. To Charles G. Lodge. Dated Oct. 6; filed Oct. 8. £50.

Dividends.

Appleby, James (trading as Appleby and Company), 55, Frederick Street, Birmingham, Jewelry Manufacturer. First and final dividend of 1s. 4d., at Whitehall Chambers, 25, Colmore Row, Birmingham, Oct. 12.

Coghill, William Douglas, 12, Pride Hill, and 12, Claremont Street, Shrewsbury, Salop, Watchmaker and Jeweler. First and final dividend of 15s. 2½d., at Official Receiver's, Shrewsbury, Sept. 28.

Martindale, William, 119, High Street, Watford, Hertford, Jeweler. First and final dividend of 3s. 9½d., at Official Receiver's, 95, Temple Chambers, Temple Avenue, London, E.C., Oct. 6.

Partnerships Dissolved.

Crichton, G. and M., 18, Princes Street, Edinburgh, Sept. 4, Jewelers and Goldsmiths. George Crichton and John Crichton, continue under the same style.

Johnson, Sons, and Edmonds, 32, John Street, Bedford Row, W.C., Manufacturing Gold and Silversmiths and Pencil Case Makers, Oct. 5. Debts by Frederick Edmonds, who continues under the same style.

Junner, G. and A., Elgin, Watchmakers, Sept. 5. Debts by Andrew C. Junner, who continues in his own name.

Mackay Brothers, 11, High Street, Dundee, Watchmakers and Jewelers, Sept. 5th. James Mackay, Jun., continues under the same style.

Myers, Jacob and Sons, Warstone Lane, Birmingham, Jeweler's Factors, Oct. 6. Debts by David Joshua Myers, who continues under the same style.

Saum and Rombach, 215, Grange Road, Bermondsey, London, S.E., Watchmakers and Jewelers.

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A number of silver and copper coins have been found at the Bulwarks, Dunbar, the storm having laid them bare. The silver coins, which are chiefly half-crowns, shillings, and sixpences belong to the reign of George III. Among the copper coins are a number of tokens, with the name "John Wilkinson, Ironmaster," on them. The coins are supposed to have been originally in the foundations of the old United Presbyterian Church manse, the excavations from which were carted to the Bulwarks some time ago.

The Watchmaker, Jeweler and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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IMPORTANT.
OUR DIARY AND DESK-BOOK FOR 1892.

This handsome and useful publication will be issued in a few days. A complimentary copy will be presented to each of our subscribers for the year 1892, whose subscription is in hand before December 31st. We cannot guarantee copies to subscribers delaying beyond the end of this year, as it is possible the edition may be exhausted, and they must incur this risk. As already announced, the Diary will be bound in strong boards, and interleaved with blotting. It will be replete with information of special value and interest to the trade.

SUBSCRIPTIONS.

Several subscribers ask us to date their subscriptions for the ordinary calendar year, commencing with January and ending with December. As we believe this would suit the general convenience, we shall, in sending out notices of lapsing subscriptions in future in cases where the subscription does not end in December, ask the subscribers to remit the proportion payable to the end of the calendar year in addition to a complete year's subscription. It will, of course, be open to subscribers to fall in with this arrangement, or continue on the old lines at their convenience.

What Constitutes A Sale.

A CASE of very great importance to everyone who transacts business at all, but perhaps more directly our own Trade, was decided at the Guildhall on November 2nd. The case briefly stated is this :—On the 19th of February last Messrs. Spink, the well-known jewelers and dealers in jewels and plate, of Gracechurch Street, E.C., were paid a visit by a lady who presented a pair of diamond earrings and a pair of drop pearls, of which she wished to dispose. That she was a lady, and a fit and proper person to be possessed of such articles, was evident to those who saw her. She gave her reasons for wishing to sell the articles, an address at which she was staying in town, and also her country address. Satisfied in every way, Messrs. Spink took her into another room, where the business was concluded, and a cheque for £550 handed over to her. Shortly after Messrs. Spink saw an account that articles similar to those they had bought had been abstracted from a drawer in the house of Mrs. Hargreaves, at Torquay. They immediately communicated to this lady the fact that they had bought them, and gave a description of the person who sold the articles. From the description given, Mrs. Hargreaves, it appears, immediately recognised a young lady who had been staying at her house when she put away her earrings, and who had left when the robbery was discovered. We are informed Mrs. Hargreaves then communicated with the young lady, and asked her, in the first place, to pay a certain sum, and say no more ; and upon her refusing this, to pay to Messrs. Spink the £550 they had paid for the earrings. But instead of doing this she showed the letters to her brother and her *fiancé*, who in their turn consulted Mr. Wontner, and an indignant reply was made, threatening an action. A selection of photographs was shown to Messrs. Spink, and they immediately recognised the same young lady that Mrs. Hargreaves had suspected from their description. We have given a few of the details of the case so far as the young lady is concerned, because most people have thought it one of the worst features of the hardships of Messrs. Spink that the young lady has not been prosecuted. There are several romantic phases of this part of the case, which do not bear upon the question that most concerns the trade, that will shortly be made public in another action which the young lady's (now) husband is about to bring against Mrs. Hargreaves.

As the young lady refused to pay Messrs. Spink, Mrs. Hargreaves felt she herself ought not to do so, and instituted the present proceedings to recover her property, when the whole question turned upon the old doctrine of market overt. It appears that Messrs. Spink, in their anxiety to give every detail connected with the purchase of the earrings, had said that the young lady was taken up into the other showroom to finish the transaction, whereupon it was argued that the room was not an open market, and therefore no property passed. Now in order to realise the sort of verdict that would be given in such a case it is necessary to know at least some thing about the haze and maze in which this doctrine of market overt is involved. The statute from which our present law has evolved dates back at least to Henry VIII., when it was deemed necessary—to protect an innocent third party in a purchase—that any sale which takes place openly in a public market should be considered valid, and property pass in the transaction. At this time, however, markets and fairs were the places where the chief sales were made; but with the growth of the City of London it was found necessary to extend the conditions of market overt, so that according to Lord Coke "every shop (in the City of London), in which goods are exposed publickly to sale, is market overt for such things as the owner professes to trade in." This might seem plain enough to many, but then come these nice hair-splitting distinctions so characteristic of law, rather than of justice. "If a sale of plate be in a goldsmith's shop (where it is properly to be sold), it must be publickly and open; for if a sale be there of plate in an inner shop, or behind a curtain, or a cupboard or such like, or all or any the windows be shut, or anything else hides it so that passers-by cannot readily see what is done there, it will not alter the property." It was upon such hair-splittings as these that the learned judge decided that inasmuch as the transaction had been concluded in an upper shop, and not on the ground floor as demanded by the statute, that no property had passed, and consequently Messrs. Spink must hand back the earrings to the owner. Everyone must sympathise deeply with Messrs. Spink over their loss, and admire the handsome manner in which they acted, in immediately rendering all the assistance they could; and one can only hope for their own sakes they will be more successful in the action which will probably ensue. Of course we are fully aware that by common law no one can acquire a good title to a chattel from a person who has himself no title, and that no property passes upon conviction of the thief. But we certainly feel that the sooner this law of market overt is shorn of its anomalies the better for the whole trading community, and we ask, if a broker's shop with its windows out and door open in a back lane in the City constitutes market overt, why should not one on the other side of the lane, just outside the City boundary, enjoy the same privilege? And if one part of a building in which business is transacted is market overt, why should not another part of the same building, set apart for the same purpose, also be legally constituted? Lastly, how does this apply to the diamond trade? Are the only legal sales those which are made by the Jews in the street in Hatton Garden? Or one might go even further than this; what about the business done on the Stock Exchange? Is that done with open doors and upon ground floors?

But the question which naturally presents itself to every business man is, who will get this unsatisfactory state of things altered for us? No individual can, however good his intentions. It is the work of a protection society, such a trade guild as we unfortunately do not possess, the need for which the circumstances of modern daily life enforces upon us the more we give the matter our consideration.

Shining Lights and Fallen Stars.

WE are constantly being taunted for our silence in regard to unchallenged statements which make their appearance in journals connected with the trade. Many of our readers consider that it is not only the office of a trade journal to seek out and bring together the facts which underlie the trade, but that it owes the further duty of warning them against the traps and snares innocently or deliberately set for them by others, and so prevent error usurping the peace of fact. They think further that the extent to which a journal does this is the gauge of its value as a trade organ. We must say that while we fully endorse these views, we are personally very sorry to attack any other journal; but as this expression of opinion is so prevalent, we feel duly bound, in self-justification, to pay a little regard to these taunts.

We take it as a principle in journalism that if a statement appears in a journal unsigned or uncommented upon, it is either the work of the editor or he is responsible for it, and as such he has the data for the assertions. We therefore call upon the editors of those journals who are responsible for the following to give the data of one single assertion it contains.

> "Investigations made some fifteen years ago tended to support the conviction that the diamond might be of cosmic origin. Later, in the year 1887, an English mining expert contributed to current literature some notes in which he showed that the motherstone of the diamonds in South Africa bore a remarkable resemblance to certain meteorites, of which he had had the opportunity of making a close examination. Finally, in a black meteoric stone which fell at Nowy Uray, Russia, and a piece of which is preserved in the Vienna Natural History Museum, there were found small crystal diamonds, representing 1 per cent. of the size of the stone. But the really useful commercial diamond is only found in a zone running through Southern Asia, South Africa, and South America, where the conditions of the surrounding earth often seem to confirm the aërolite theory. In South Africa the majority of the diamonds are found at a good depth below the surface, and the burnt track of the meteorite may frequently be traced in the soft soil. On the other hand, particularly in Brazil, mines are heard of which have become completely exhausted after a short working, pointing to the probable circumstance that the diamond-carrying meteors have, in this case, been of comparatively small size, or have fallen upon extremely hard rocks, on which they have at once been dashed to pieces."

One can very rarely pick up *some* journals without seeing something incorrect in them, but an article without one single fact in it one hardly expects to find. But this is even worse than that; it not only does not state what is true, but it states what is absolutely false, some of its assertions contradicting the most elementary facts connected with the diamond industry; which, if they were true, would have a very serious effect on the diamond market to-day. The diamond zone is a pure myth! the writer cannot know the meaning of the word, and still less of geography, as anyone with the slightest connection with the trade or literature ought to know. Nor would a tellurian zone confirm the aërolite theory—quite the reverse! Nor does the asserted distribution of the diamond in South Africa substantiate what is said with regard to Brazil. There is nothing that in any way whatever resembles a burnt track of a meteorite in a diamond mine! The lower shales, quartzites, "melaphyres," upper shales, and basalt are all pierced with the diamond-bearing rock, and instead of coming from *above*, came from *below*, as is certain from the facts—firstly, that the softer shales have their edges *upturned*; and, secondly, that huge masses of the lower rocks are brought up towards the surface, occurring as floating reef in the diamond-bearing rock itself; one mass—the island of De Beers—has an area of over 3,000 square feet of unknown depth. Further, neither the man who wrote the article in question, nor the one who clips it, can have the least idea either of the size, shape, nature, or anything else of a diamond mine. Moreover, he cannot have the faintest knowledge of physical astronomy! The effect of a collision of a mass of the size of the Premier mine with our planet is not for a moment taken into consideration, and as before observed, instead of the surrounding rocks being depressed they are *upturned*. Possibly the author would suggest that such masses entered our planet somewhere about Japan, and forced their way through the earth to the surface again in South Africa, and so originated the seismic disturbances of the former area. It would be a bad look out for the De Beers if their mines were nothing more than aërolites, likely to end a few feet below where they are now working. But we do not suppose the De Beers Company are at all afraid of that, seeing they have pierced far beyond their present workings, and probably further than will be worked during the lifetime of any member of the present company. With reference to Brazil, no true diamond-mine is known to exist at all, nor does the diamond occur in its original matrix, but only as an associated pebble. Other questions raised will be met in the next article.

Diamonds in Meteorites.

WHEN earth approaches that elliptic zone
Which girds the sun with meteoric stone,
Meteors scatter as the earth draws near,
Flash like a fiery host, shoot, blaze, and disappear!

There is something awfully fascinating about these heavenly messengers. Whence come they? What is their origin, and of what are they made? Are they old volcanic bombs that have been projected from the earth in bygone geologic times—when even this stable little isle of ours was belching forth a seething, fiery mass, larger than its present area—revolving round the sun in orbits intersecting that of the earth? Or do they come from the realms of space, moving in cometary orbits? And are they little worlds in themselves, of which countless billions are distributed through the universe? If the latter, then the materials of which they are composed become extremely interesting, as pointing to the chemical composition of other worlds beside our own. It is only of late years that our knowledge of these celestial visitors has possessed any scientific value. They have been seen to fall time after time, and have been recovered and made the subject of scientific examination. The first thing that strikes one is the dissimilarity which they present amongst themselves, and according to their composition they have been divided into siderites when principally metallic, siderolites when partially metallic and partially stony, and asterolites when wholly stony. Their structure and surface lustre too, is very distinctive and characteristic. With as much knowledge of them as this it is easy to identify other masses which are found on or near the surface of the earth, the date of whose fall is unknown. There has been about two dozen elements found in them, none of which are new to our planet; they include—Iron, Nickel, Calcium, Magnesium, Alluminum, Oxygen, Phosphorus, Sulphur, Carbon, Silicon, Cobalt, Manganese, Antimony, Chromium, Copper, Tin, Arsenic, Titanium, Lithium, Sodium, Potassium, Chlorine, Nitrogen, Hydrogen.

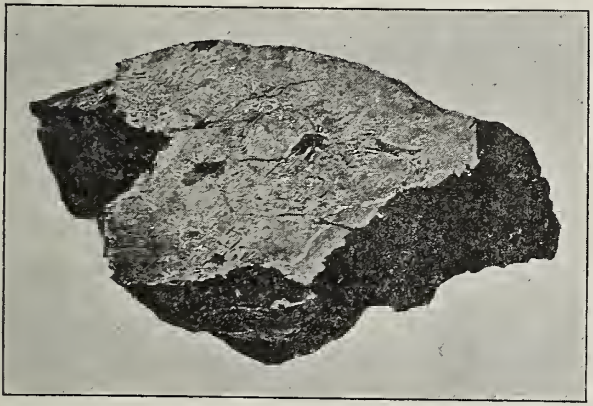

Fig. 1.

But with mineral species, on the other hand, there has been recognised some thirteen not known to occur on this planet, while several others are under consideration. They are as follows:—

Tellurian.

Anorthite
Augite
Breunnerite
Bronzite
Chromite
Cordierite
Corundum
Diopside
Enstatite
Garnet
Graphite
Hornblende
Magnetite
Olivene
Pyrrhotite
Quartz

Extra-Tellurian.

Asmanite
Chamasite
Cohenite
Daubrèelite
Lawrencite
Octibbehite
Oldhamite
Osbornite
Rhabdite
Schreibersite
Tænite
Troilite

In addition to these there are various other alloys of iron and nickel; the gases occur occluded, and there are further several soluble salts. Several of these new minerals have been prepared synthetically—*i.e.*, built up from the elements of which they are composed—in the laboratory, and the whole of synthetic research goes to show that the structure of these bodies results from igneous fusion pure and simple.

But the element that possesses the greatest importance to us at present is carbon, which has again recently been found in its isometric form, which we know as diamond, in one of these meteorites.

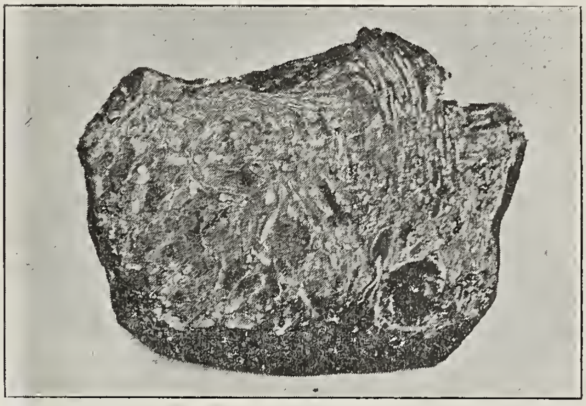

Fig 2.

In America there has been seen to fall numerous meteorites, which have been subsequently obtained, and much information about them collected. They have been seen to pass and drop their burdens over several States in one flight; and there can be no doubt that very large quantities of these siderites have fallen over various parts of the earth throughout all time. Before us at the present moment lie spear and arrow heads, made of native iron from isolated islands, in which no iron deposits are known, nor the inhabitants sufficiently civilised to work it: it is thus probable that the iron is of meteoric origin. There is a peculiarity about the structure of these siderites, in that when a clear surface is cut and treated with acid curious figures are developed, known as "Widmanstätten figures." Fig. 2. represents these very beautiful markings, which are well known to every student.

In the early part of this year it was circulated that a vein of pure iron two miles long and forty-five feet wide, carrying gold and silver, had been found in Arizona. Suspecting what this might be, Prof. Foote set out in search of it. After having discovered the locality at Canon Diáblo, he set to work with five men to gather these "remnants of a former world" together. There was no mistaking the nature of them; large, well-preserved masses presented the characteristic gloss, and although most of them were oxydised, upon treating them with acid the Widmanstätten figures soon manifested themselves.

Elated by the discovery, our friend sent us word from Arizona, and soon forwarded us some specimens of the meteorite. Fig. 1 is taken from a block of 40 lbs. weight, in which Professor G. A. Koenig found a small black substance, which ultimately turned out to be a veritable diamond. In the centre of the figure, at D, can be seen an irregular cavity; the reduction of this specimen to the size of the engraving obliterates the diamond, which in the specimen can be easily seen near one of the sides. To the right of it, however, can be seen circular indentings caused by loosened diamond fragments. There could be no mistaking the hardness of the diamonds, as they cut corundum readily. By treating the black contents of a cavity with acid a clear white diamond was obtained, which although only of microscopic dimensions, was, nevertheless, a true diamond. The meteorite itself belongs to the siderite group, being essentially native iron, with admixtures of nickel, etc. We have over a dozen of these specimens now before us, and the yellow color of the alloys easily explain how the notion got abroad that the iron carried gold. A great part of the markings on Fig. 2 are of a golden color; whilst scattered about many of them may be seen small white and yellow bright metallic spots suggestive of gold and silver. The size of the fragments varied from a few grains up to 867 lbs. in weight.

It is quite possible and, indeed, highly probable, that when other fragments are cut diamonds will be discovered in them. In addition to the diamond several other meteoric minerals, including troilite and daubréelite have been found, so that there cannot be the slightest doubt of the meteoric origin of the specimens. To more fully realise the case it may perhaps be advisable to say a word or two upon the states in which the element carbon exists. Now there are several elements and compounds that exist in different states, in which they may resemble each other in nothing save their chemical composition; amongst these is the element carbon, which exists in at least three distinct allotropic forms, known as diamond, graphite, and charcoal. The latter form is too well known to require a word of explanation. Graphite is the substance from which "black-lead" pencils are made; it is opaque, metallic, and crystallises in the hexagonal system. The diamond, on the other hand, is glassy, usually transparent, and crystallises in the isometric system. Further, there is a principle in crystallography called pseudomorphism, in virtue of which minerals, under certain conditions, become changed, retaining the original forms. Now in reference to this discovery of diamonds in meteorites we might mention that, as early as 1846, Haidenger described an isometric form of carbon, which by some is considered a pseudomorph after diamond, in a meteorite.

There are further several specimens in the Vienna Museum, which require further examination before they can be satisfactorily dealt with.

Lastly we have the discovery of our countryman Mr. L. Fletcher, the head of the mineral department of the British Museum, whose *Cliftonite* may also turn out to be a pseudomorph after diamond. But most of these occurred in a siderite; rather than at the other end of the classification, where minerals are found very similar to those of our own ultra-basic rocks, such as serpentines and peridotites. It is under the latter category that the Kimberlite or diamond-bearing rock of Kimberley falls, and it is this fact which has been so perverted in the paragraph alluded to in our foregoing article. But Kimberlites are by no means confined to Kimberley. They occur over many places in Europe, including our own country, Asia, and many localities in the United States.

These then are the plain ungarnished facts which have been so mutilated and perverted at hands whose chief duty it is to place them in a reliable and trustworthy form before its readers. The discovery of a crystalline element in a meteorite is of interest to the scientist, and to every man in the trade with a mind above a brute, as pointing to conditions under which the element can be found crystallised. But it no more "tends to support the conviction" that the diamond pipes (or mines) are meteorites, which may stop short at any moment, than it does that we may expect some day to get a shower of diamonds, large enough to build a palace for every tellurian troglodyte.

Notes About Town.

The past Month. There seems to be a little difference of opinion in describing the trade of the past month; many are grumbling, but quite as many—or perhaps even more—say they must not indulge in that privilege; so that considering the unprecedentedly bad weather, when the barometer almost beat its own record in downward motion, we ought perhaps to be more than satisfied. All the factories are busy, and in most cases running overtime, And this, too, on regular "bread and cheese" stuff.

* * *

Handicapping Novelties. There is always a charm about "bread and cheese" stuff to the manufacturer—and the men too, generally—which exceeds even "the charm of novelty"; everything is to hand for it, patterns and dies are ready, quantities and time known. It is only saying off the same old piece, without learning a fresh line. But with a novelty, on the other hand, there is always an immense amount of trouble and speculation, and a glorious uncertainty as to whether it will "take." Then, besides, there is the existence of that state of affairs that allows another man to step in and copy ones idea without the trouble or skill of original production, which perhaps is effected in a commoner quality, poor finish, and lower price. It is obviously very hard on a manufacturer, after expending brains, trouble, and capital over a dozen novelties, that only one of them (which may, perhaps, be the least meritorious of the lot) should "take," and then everyone allowed forthwith to make it in any quality or style.

* * *

Needed Reforms. It may be argued that registration would protect him. Just so; but with the present system of registration and patent laws the machinery is too cumbersome and expensive; and for a man to apply them in their present form to every article he produces is entirely out of the question. The laws regulating copyright in design are as important as in authorship, and the sooner we have these laws altered, simplified, and cheapened, the better it will be for the trade.

* * *

Few Novelties this Christmas. It is owing to these facts that we have been met so frequently this season with the reply, when in quest of novelties, "I don't know that we have anything much new; the fact is, we have been too busy upon regular stuff to think about novelties, there is always such a lot of trouble with things of that sort." I can only say it is a good job manufacturers can afford to stop at a little trouble. Such a firm should never speak of the times being bad, when they know that they have only to put out a little energy to secure considerably more business.

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The Manufacturer's "Open Sesame." I have known small but enterprising men to "get into" the best houses in the trade, over the shoulders of large manufacturers, simply by a few novelties; just as the old aristocracy of the trade have, within the last twenty years, seen men come up to the front and top by adopting the necessity of the times in advertising, and by catering for the wants of the public. When the public have a want they have only to know when and how to get that want satisfied; and in the same way when retailers have wants, they must be made aware of the existence of those who can supply their requirements.

Xmas Novelties. Prominent amongst the promising novelties which are being held back till the Christmas season is fairly set in are some new combined watches and chains. For some time these have looked favorable, large quantities have been selling, and some very effective and beautiful designs have been turned out, from oxydized nickel and red gold to articles of the most expensive description, where transparent enamels, and gems of every description, have been combined with watches with all kinds of movements.

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What is being Worn. Astronomy (save the mark!) is still appealed to for inspiration of design. Naturally a little digression from the original has been made by conventionalizing, or, as our biological friends would perhaps call it, retrograde metamorphosis. The sun is still shining brightly on the fair necks, chests, and heads of society ladies; the centre is being employed for all sorts of colored stones, notably the ruby, when such a luxury can be indulged in, many of which I have recently seen made up to order; and for stocks of very great value colored diamonds and pearls are also employed as centres. The limbs of the original rays are becoming less natural, and although it is against what would be generally considered the canons of art delicate foliage is being introduced, with by no means unpleasant effects, between the limbs. Perhaps advocates of the rigid adhesion to nature will feel compensated for the above conventionalization of his solar majesty by the reformation made in the shape of the crescent, which is now of nearly natural shape (too straight, perhaps, if anything). One form now selling is made up of graduated comets arranged crescent-shape

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The Silver Trade. Around the vicinity of Charterhouse Street the bustle and late hours of departure from business testify that things are in a satisfactory condition. I could hear of no complaints, but quite the reverse in most instances. While walking through the magnificent gallery of Messrs. Atkin Brothers I was struck to see so few Tantalus-frames, as their patent is undoubtedly in many respects the best, simplest, and strongest that has ever been brought out; but upon inquiry I found that the low number in stock was not to be attributed to its fall in favor, but to the great demand for it.

Other showrooms that I am always interested in walking through are those of Messrs. Horace Woodward, not only to get a sight of the big cups, trophies, and that sort of thing they frequently have on view, but on account of the general excellence of everything they produce; just the same, or, if possible, better than they used to be in our young days, when price was perhaps not taken so much into account as it is at present, and when retailers did not put in the window "all spoons and forks at 1s. 8d. per oz., about the price of crude silver."

* * *

"Weights and Measures." Once more the excise authorities are busying themselves in enforcing the Weights and Measures Act of 1878, and numerous convictions are being made. It is a great pity some decisive step is not taken in this matter. It being law, administrators should let the trade know definitely that it is to be obeyed; and not act in fits and starts, as in the past.

On Friday 20th ult., a dinner was given at the Horseshoe, Tottenham Court Road, to celebrate the wedding of Mr. Geo. Chandler, Junr., of the old firm of Messrs. Chandler and Williams, now Messrs. Chandler and Son, to the firm's employés. In addition to a good repast; toasts, music, and other good things were indulged in, altogether making a very pleasant evening. Many of the old hands have seen the development of Mr. Chandler from a boy, and his quiet good-natured business-like disposition has earned for him a great respect.

Birmingham Notes.

(By our own Correspondent.)*

My prognostications of a month ago have been fairly well fulfilled during the last four weeks. There has been a good steady business done, and manufacturers and factors alike have been fully occupied. The appearance of the district late at night, when so many of the establishments are in full light, gives evidence of overtime and the rushing off of parcels. Still, I am inclined to think that the total results will not be quite equal to those of a year ago. The general trade of the country is not in so good a condition now as then, and this, added to the havoc wrought on agriculture by the extreme weather, is a sufficient explanation of any small deficiency there may be in the turnover. Considering these things, the trade has every reason to be satisfied with themselves so far.

As to the outlook—although the commercial barometer is somewhat unsettled, the reading for the immediate future is still fair, and a good trade during the current month is certain. The disturbing elements are at present too indefinite to have any serious effect on the Christmas trade, which will force itself as usual on our friends, the public. So far good; but I would expressly note that the prophecy covers this month only, while beyond the horizon is somewhat cloudy. In the next issue I hope to give a more extended indication of the possibilities of the new year.

The usual flood of Christmas approbation has hardly commenced yet. Being late in commencement, it means a more severe rush than usual during the next two or three weeks.

The orders for medals and club badges, to which I referred last month, have not yet reached the firm in question, who have now given up all expectation of them. I am afraid, too, that they have not come to Birmingham, as we cannot hear of them from any of the other makers here.

There is one feature of the Birmingham Jewelers' School of Art that is worthy of special notice. It is the issuing of a monthly document to the employers of the boys in the school, showing in detail each one's attendance and conduct. This paper gives at a glance the full number of attendances possible during the month, the number actually made by each boy, and the general characteristics of his conduct during school hours, as "good," "fair," "indifferent," and "bad." The masters are thus able to keep a strict supervision over the boys, and any irregularities, either of attendance or behaviour, can be noted and checked, which, besides, is of great use to the employer in assisting his judgment of the relative worth of the boys growing up under him.

The Free Silver Policy of the United States has already tended to the cheapening of silver here, and it will doubtless to that extent be of service to our manufacturers. There is some anticipation in financial circles that the bi-metallist countries will form a union against our English gold standard, and try to force our hand into accepting a bi-metallic currency. Probably such a proceeding would hamper our operations and give us trouble, but we do not think that any such combination would have power to permanently affect our position in the money market.

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent.

I AM hardly in a position to say to what extent Birmingham rivals Sheffield in the production of plate, both sterling and electro; but I am pleased to say that both departments are extremely busy here. It seems to be a growing trade with us. The wholesale dealers, too, while giving a doubtful shrug when asked as to their jewelry sales, say that they "can always sell this sort of stuff," pointing to their cases of plate. I have lately heard the same remark both here and in the North of England.

OUR local pearl workers occasionally have a stroke of luck. Some short time ago a fine pearl was discovered in cutting up a shell, which is now worn as a breast-pin to the adornment of the lucky finder. Such finds, however, are not of frequent occurrence, as the existence of a pearl is nearly always indicated on the inside surface of the shell, and they but rarely escape the scrutiny of the first possessors.

ALDERMAN CLAYTON, ex-mayor of Birmingham, has just been presented, among other things, with a silver cake-basket. This is of interest as having been made by Messrs. Boulton and Fothergill, who were the first firm to enter their punch for hall-marking at the Birmingham Assay Office when first opened on August 31, 1773. The basket is marked with the first and largest of the six punches entered on that day.

SOME amount of discussion has been going on in the Birmingham papers on the subject of pawning of stock as a custom of the jewelry trade. The matter was started by some remarks of Mr. Registrar Parry, of the Birmingham County Court, in connection with the bankruptcy of S. Bradley. The Registrar said that "there did not seem to be much harm in pledging . . . . as it was a custom of the trade." Such a statement from such an authority naturally called forth a denial, and Mr. Walter Best, Chairman of the Birmingham Jewelers Association, gave an official and emphatic protest. Some few letters followed; but it is hardly necessary to enter into the pros and cons of the case. Suffice it that it is affirmed "pawning" has no place whatever in the jewelry trade properly so called. It may be used on occasions by bankrupts, and other dishonest members of the trade, as a means of raising money when pressed; and doubtless under these circumstances it has come to the knowledge of Mr. Registrar Parry, but beyond this, it is in no sense of the term "a custom of the trade."

BUT while we thus dismiss the matter, one cannot but wonder what has become of our friend the *Daily Mail* during all this controversy. With its well-known antagonism to, and its often shown spite against our trade, we have been daily expecting one of its old-fashioned tirades against the jewelers and their methods of business. Surely this was an opportunity not to be neglected. The wholesale pledging of one's stock-in-trade would form a most fitting peg whereon to hang an universal censure of the trade at large. Never before, so long as I remember, has a chance, however slight, been missed; but on the most trivial occasions a volume of invective has been hurled at our devoted heads. Has the stock of spleen run out? or, perhaps the *Daily Mail* has kindly forgiven us for being jewelers, and is now willing to let us go our own way in silence. Well, we have no desire to prolong the quarrel, which was never of our own seeking, and we are equally willing to shake hands and be friends. Let the curtain fall on the affecting scene.

I HEAR that for the last two months the shippers to Sydney have been extremely busy getting off large quantities of goods, so as to rush them in at once if the port is to be closed.

THEY are having very late hours at the Assay Office just now, the work not being ready till from six to half-past six o'clock at night, while even then the messengers often have to wait. This seems to say that the various makers are busy, and sending large quantities of work for hall-marking, It further indicates a matter that has been forcing itself on the attention of the observing for some time past, viz., the increasing demand on the part of buyers and the public for goods which bear the authoritative assay mark, as distinct from those which are merely of bright or colored gold, or of silver. Without doubt, the various frauds which have been brought to light are largely responsible for this feeling, which the general effect of the Merchandise Marks Act tends to strengthen.

WE should imagine that Mr. Rosenberg's connection with the Birmingham jewelers is at last terminated. After his recent exposure by His Honor Judge Chalmers at our County Court, he is not likely to be received here with any pressing invitations to select goods on credit; and apparently credit is far more in Mr. Rosenberg's way than cash payments. His record of failures is, I think, unique, even for the jewelry trade. But does the blame rest entirely with him? Is it not rather shared by those who thus time after time are willing to run the risk with their eyes open?

WE have in our Municipal Art Gallery a splendid example of what may be called the "barbaric splendour" of the jeweler's art. It is a cap which belonged to the last King of Delhi, and it is formed of rich gold embroidery, thickly interspersed with gems of all colors. Diamonds, rubies, emeralds, carbuncles, etc. (many of them of large size) literally sparkle in profusion; and altogether it seems to satisfy one's imagination as to what the "gorgeous East" must be. In the same case are several hand ornaments (wristlets and finger rings combined) of a similar nature. There seems to be no attempt at harmony of colors in the disposal of the gems, but simply gorgeous display. These articles are of great interest, and well worthy the attention of our designers and workmen. They are, however, quite useless as models, and are of value only as suggestions for new designs, and things to be avoided. If a similar style were reproduced in modern work it would be absolutely unsaleable.

BIRMINGHAM has been pretty well overrun with diamond dealers during the last month. Does this indicate any special activity among the diamond cutters, or simply that the London market is flat, and consequently that dealers are trying to force sales in the country? The latter, we think.

WHAT has been done in the matter of gentlemen's wedding-rings, as mooted across the Atlantic some time ago? It seems to me a very good idea, and likely to be well taken up if its purport were fully grasped by the feminine portion of the community. Let our wedding-ring makers see what they can do in the matter; it would be greatly to their advantage. Could they not manage to "rush" the idea by a judicious movement amongst their retail customers? Let them produce a ring of distinctive shape; let it be labelled and sold as the gentleman's wedding-ring; and lastly, let it be well advertised (The Watchmaker, Jeweler and Silversmith is a first-class medium), and I have little doubt that it will soon "catch on." I give them the idea for what it is worth.

EDWARD JOHN HAYNES and Robert Haynes, and Robert F. Glover, trading as the Compton Cycle Company at Birmingham, Cycle Makers, have dissolved partnership.

Sheffield Notes.

(By our own Correspondent.)*

THE great public departments are far too dignified ever to get in a hurry. They don't profess to keep up with the times. If the times get ahead of them that is the affair of the times, for which the great public departments are not responsible. Up to the 1st of October last it was impossible to get a document of any sort stamped in Sheffield. This would have involved an innovation so great as to be utterly inconceivable to the official mind. At last, however, after many respectful representations (one has to be respectful in dealing with the Department), the prayer of your memorialists has been granted, and one can now actually take an agreement up to Leopold Street and get it stamped while one waits. Lest, however, the change should be too great for us, it has been decreed by my lords that even yet documents in parchment may not be stamped in Sheffield, nor any deeds relating to the registration of trade-marks. This, it appears, is not owing to any disinclination on the part of the Inland Revenue authorities to accommodate Sheffield, but to the great expense which would be incurred in making the change. The lay mind may not be capable of grasping the idea, but that doesn't matter. We can't have all the facilities we want, and so, perforce, the Chamber of Commerce, after eliciting the foregoing facts, has, on the principle of being thankful for small mercies, passed a formal vote of thanks for the benefits already conferred on us.

AT the commencement of the month little could be said for the state of the optical and allied industries, but as soon as the month had set in a decided improvement was experienced all round, especially with lanterns and slides, although electrical goods are coming in for a fair share. Photographic instruments have, of course, sunk somewhat, but in many instances they are being replaced by telescopes and micros. The weather does not yet appear to have been cold enough to create a demand for thermometers.

NOT even a critic whose special line was bricks and mortar has ever accused *us* of turning out goods that were other than respectable from an æsthetic point of view. This is fortunate, because, after a run round the various showrooms at this season of the year, one would scarcely be inclined to believe him. The extent to which the influence of the School of Art has leavened the lump of Sheffield manufacturing society may be seen in the attractively stacked show-cases which meet the eye on every hand. A more striking display of effective Art workmanship than that which claims the attention of the visitor to the manufactories of the town has perhaps never been seen. If an extensive show of novelties, artistically got up, can stimulate trade, the Christmas season ought to be a prosperous one.

AS was to be expected, the Manchester, Sheffield, and Lincolnshire Railway Company are preparing to re-introduce their Bill for an independent route to London into the next session of Parliament. At present the Midland have a practical monopoly of the goods traffic, and however well on the whole we may be served by that company, we have set our minds upon having another direct line to London. The injustice to the Manchester, Sheffield, and Lincolnshire Railway Company in having to hand over to the Great Northern traffic collected at great cost to themselves, although violating our sense of fair play, does not, it must be confessed, weigh so much with us as a lively sense of favors to come when the new railway is made. I grieve to say also that the agonised cry of a London residential suburb at the prospect of having a railway run through it is viewed here with brutal indifference. Although nothing could be a greater surprise than the rejection of the Bill last year, yet on the whole the probabilities are that this year the measure will become law.

AN important step has been taken in the direction of public electric lighting in Sheffield. The Town Council has just agreed to support the application of the Sheffield Telephone Exchange and Electric Light Company, Limited, for a provisional order to supply electric lighting for public purposes within the borough. The provisions dealing with the taking up of streets and so forth raise hopes that the days of overhead wires are numbered. This, however, may be too good to be true, but at any rate the prospect of having the centre of the town lit up with arc lamps is sufficiently alluring. The large and increasing number of these lamps fixed outside the shops of private tradesmen enables us to form some idea of the general effect when the electric light is applied to the public lighting of the town.

THIS reminds me that at the last meeting of the retiring School Board the board-room was for the first time lighted by electricity. The whole of the necessary work has been executed by pupils of the Central High School, under the direction of Mr. Watkinson, teacher of electrical engineering and machine construction in that institution. The power is derived from a gas engine, used for turning lathes and other purposes in the Central School. Satisfaction was expressed at the improved state of the atmosphere as compared with the previous meeting of the Board when gaslights were burning round the room. It is understood that one room in the school itself is fitted up with the electric light.

I HEAR that one large limited company whose trade is mostly with the United States is permanently reducing its office staff in consequence of the incidence of the M'Kinley tariff. This is the penalty it has to pay for having all its eggs in one basket. But if the craze for protection now raging in nearly every country but our own goes on, even those firms whose business relations are of a more all-round character will be ultimately affected. Carried to its logical conclusion, the result would be that every country would make its own cutlery, its own electro-plate, and its own railway material. A very much smaller space of land than we now occupy would then accommodate the town of Sheffield. It is probable, however, that as long as the world lasts the law of the survival of the fittest will still continue to operate, in which case we shall most likely be able to give a good account of ourselves.

THAT portion of Mappin and Webb's new premises which fronts Norfolk Street has now been denuded of its scaffolding. The new building is much higher than the older part of the firm's premises, which flanks it on one side, and of the show-rooms and offices of Mr. Maurice Baum, which adjoin it on the other. It thus forms a prominent feature in a comparatively central situation, an advantage which it possesses over most of the other first-class silver and electro-plate establishments of the town. An air of picturesqueness is imparted to the façade by the oriel windows over what will ultimately constitute the main entrance to the firm's offices. The finishing touches to the interior and the office fittings will probably take up some months yet. When these are completed we shall avail ourselves of the offer, made some time ago, of a personally conducted run round, and give our readers the benefit of the result.

We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Country Notes.

WE are informed that tenders have been received for the erection of the additional premises of the Lancashire Watch Company. The new building will be three storied, and cost probably some £8,000. This building is to be employed for hand work; and is in addition to the fast completing new wing, which will be used by tool makers, smiths, and joiners.

NEWS from Prescot is of a very encouraging nature; they are well off for orders, and are contemplating new features which may surprise some people, but which will, nevertheless, do much for the elevation of the Prescot Company.

AT a meeting of the directors of the newly-formed Cycling Company, at Prescot, five tenders were received for the erection of the new factory in Warrington Road, and after careful deliberation the tender of Mr. John Lucas, of Eccleston Street, Preston, was accepted.

MR. STEPHEN FARREN has resigned the secretaryship of the Coventry Watch Trade Association.

IN Manchester a decided improvement has manifested itself in optical and electrical goods. Amongst the former numerous houses are turning out large quantities of fine quality high-class micros, whilst lanterns and slides are even going faster.

IT is impossible that the Coventry Technical Institute this year should not secure a great benefit to the trade, seeing that the following well-known gentlemen in the trade are on the committee: Alderman Chas. J. Hill, Messrs. John Rotherham, Philip Cohen, William Gooding, Rowland Hill, Mathew Dodwell, A. E. Fridlander, and Joseph Player. But Rome was not built in a day, and the full benefits of technical education are not realised in one year. Some people's idea of a technical institute is that it ought to be like the fabled mill—in which the decrepit, useless old folk were dropped, and came out young, clever, and everything else at the other end—or nothing at all. Then there are others who foolishly remark that "fifty years ago, when we were at the head of the watchmaking industry, we did not have any of this nonsense about technical education, and we kept our lead without it; and ever since watchmakers have got their heads muddled with it the industry has been flagging." A little over fifty years ago the good old British Oak was considered quite equal to maritime conveyancy. If we had set our backs up against the development of steam and mechanics, who would now have been "Queen of the Seas"? But Heaven be thanked, all are not watchmakers.

WE regret that the following was by some means squeezed out of last month's journal, especially as it concerns a name so well known and highly honored and esteemed in the trade. The wedding of Mr. Herbert Charles Hill, eldest son of the well-known Mayor of Coventry, to Miss Mary Lynes, second daughter of Dr. E. Lynes, J.P., who comes of one of the oldest and most respected families in Coventry, was celebrated on the 21st October, in the presence of a crowded church. It was a high day, not only for the families concerned and their friends, but for all the employées. The presents were both numerous and beautiful. At a dinner given to the indoor workpeople various interesting and commendable speeches were made, and toasts drunk and sentiments exchanged, and an evening of supreme enjoyment was spent.

Transatlantic Jottings.

M. MYERS, a diamond dealer on the Bowery, New York, has a desire to cultivate a taste for the profession in his juvenile son at an early age, and allows him to play with the charming little objects. The other day, however, the little chappie ran off into the street with 15,000 dols. worth, returning without them.

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THE lately issued bulletin of the imports and exports from Washington D.C. shows a remarkable increase of imports in many things compared with the corresponding period of last year. In the month of August last there were uncut diamonds, etc., to the value of 112,829 dols., compared with 15,660 dols. for the same month last year.

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FOR the eight months ending August 31st, 1891, diamonds and other precious stones amounted to 582,798 dols., against 228,995 dols. in 1890.

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WHEN we come to clocks a very different tale is told, for during the same period only 89,541 dols. have been imported, compared with 218,991 dols. in same period of last year. Watches, oddly enough, show a further increase, being 1,175,422 dols., against 1,070,207 dols. in 1890. Jewelry and silverware show a decrease to 736,408 dols., compared with 1,028,489 dols. of 1890. Cut precious stones, etc., unmounted, also show a decrease, being 8,321,633 dols., against 9,475,070 dols. in 1890. There was also a falling off in bronze goods.

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TURNING to exports, we find clocks and parts thereof fell in August, 1891, to 57,902 dols., compared with 106,833 dols. for the same month last year. But the most remarkable item of all is watches, which fell to 13,077 dols. from 41,122 dols. August, 1890. Jewelry also fell 15 per cent.

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THE figures of the eight months ending August, 1891, compared with the average of the preceding five years, show increases in imports in watches, etc., 119,332 dols.; jewelry and precious stones, 434,347 dols.; while in the exports the increase of clocks, watches, etc., amounts only to 14,702 dols.

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WE thus see that the operations of the McKinley tariff do not have such a one-sided effect as one would have imagined; indeed, we hear from many quarters that staunch McKinleyites are beginning to realise that prohibitive protection is not such a panacea for all the ills that trade is heir to as they expected, and that while it cripples many indispensable branches of trade, in the end they are no better off, if as well.

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WHAT American jewelry stores are like may be gathered from the fact that a Chicago firm have just obtained a permit to build new premises, a sixteen-storey building, of red brick and terra-cotta, with a skeleton steel interior. The frontage will be 105 feet in Madison Street, and sixty-six feet in State Street.

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ANOTHER jeweler has leased a place in State Street from May, 1892, at a rental of 210,000 dols. for the first ten years, and 250,000 dols. for the second ten, but this is only a five-storey building.

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EVERYTHING is pushing forward in connection with the Chicago Exhibition. Many countries are sending in their intention of participating in it. The diamond fields of South Africa will be specially represented and the whole of the processes exhibited.

Round the Watch Factories.

A NEW jewel-set machine has been set up at the Waltham Factory. It is claimed to be the only one of its kind in existence.

It is said the Illinois Company are benefiting rather than otherwise since the fall in prices of the Elgin.

Mr. Wolcott, President of the Board of Trade, has given a site and offered to subscribe 1,000 dols. cash for a watch factory in New York. Other inhabitants have also come forward with subscriptions, so that the projectors expect to be able to start almost directly.

The Wandsworth Watch-case Company have been running double time for some five or six weeks in order to meet the demands for Christmas.

The hands of the Rockford Watch-case Company now work nine hours a day instead of ten.

The Kingstone Standard Watch Factory, Lancaster, Pa., is at work again, after being closed for some time.

The New Standard Watch Company have reduced their 3 dols. 50 cents. watches to 3 dols.

The Waltham Watch Tool Company's factory is very busy, especially with some of their lathes.

The Manhattan Watch Company are turning out the "New York Chronograph Watch" in gold-fitted cases. It sells retail at 20 dols.

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Watch and Clock Making.

(*Continued from page* 95.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making

(II.)—Advanced Paper, 1880.

Remarks.—The principal points to be observed in examining a chronometer escapement are the following:—The tongue of the detent should be so adjusted that the deflection of the relieving spring in one direction, and of the detent in the other, are approximately of equal magnitude, and the latter of such an extent as to leave a small marginal movement to the detent, after the escape wheel is released, and before it becomes disengaged from the relieving pallet.

The impulse pallet requires to be in such a position that it just dips safely into the periphery of the escape wheel and no more. Some books name 5° as the necessary angular measure of penetration into the periphery of the escape-wheel at the instant the latter becomes disengaged. That such a large measure is unnecessary will be apparent from the following experiment:—If the impulse pallet of a chronometer, or even duplex, is so adjusted that the teeth just miss the pallet when the balance is guided, it will be found (all other things being right) that when the balance is started, with a velocity due to a deflection of about 180°, that the escape wheel gives impulse, a result which is due to the inertia of the escape wheel. The safety of penetration can be practically ascertained thus:—Guide the balance till the tooth, passing into action, drops on to the pallet; then reverse the balance and observe the angle through which it has to be moved before the escape wheel is released; if there is any pronounced angular motion at all the penetration is safe. Every part of the detent should be as light as possible, so that the point of contact with the stop-screw coincides as nearly as possible with the centre of percussion, for then the tendency to tripping by reason of vibrations due to concussion will be a minimum. Also the escape wheel requires to be as close to the blade of the detent as possible to make the tortional moment as small as possible (see (1) No. III. Honors paper).

Question (10).—Describe the depthing tool, including the use to which it is principally applied.

Answer.—The depthing tool consists of two pairs of parallel centres, mounted in two frames in such a manner that they are moveable in a direction parallel to their axes, and also in a direction perpendicular to them. The first adjustment is effected by running the centres in friction tight borings with provisions for clamping by milled-edged buttons, and the latter by an angular motion of the planes of the centres about a joint. A clamping screw is applied to adjust the angular position of the frames against the initial strain of a spring which presses the frames together. Its purpose is to mount any two objects which have a mutual or relative engagement about fixed centres, such as an escapement, depth, or stopwork, and to determine the distance of such centres in their proper positions, or to examine the conditions of such engagements.

Remarks.—A depthing tool, if it is to be of real service, requires to be carefully constructed. To test it, it should be ascertained that all four centres run absolutely true, and that in every possible angular position the distance of both ends of the centres coincide, which can be done by describing a circle with one end and referring the other to the radius of the circle. It is remarkable that the small-sized depthing tools are not more used, since they admit a much better inspection than the ordinary larger ones.

Question (11).—How would you ascertain in a cylinder escapement that the cylinder is too large or too small, and in a lever escapement that the opening of the pallets is too great?

Answer.—If the cylinder is too large the drop inside is in excess of that on to the outside, and if too small the reverse of this is the case. Also in a lever escapement, if the opening is too large the drop inside is in excess of that on the outside locking to plane.

Remarks.—In selecting a new cylinder there is no better way to make sure of its right size than to place the cylinder and the escape wheel in the depthing tool to try the drop.

Question (12).—Explain clearly the circumstances that render a compensation balance unnecessary with the cylinder escapement.

Answer.—The effect of a fall of temperature is to cause a gain as far as the functions of the balance spring is concerned. The cylinder escapement being a frictional rest minimised by lubrication, the resistance is increased with the fall of temperature, which tends to loss; thus the effect of a change of temperature on the balance spring is approximately neutralised by its action on the resisting motion.

The compensation balance is designed also to neutralise the effect of temperature of the balance spring, and its action is therefore along parallel lines, as the action of the temperature on the frictional resistance, and would therefore tend to an over compensation, and hence has no place in the horizontal escapement.

Erratum.—Page 26 (August) and page 51 (September) read 1880 for 1890. And on the latter also read c for d, and d for c in the proportions to equations (β) and (γ) respectively.

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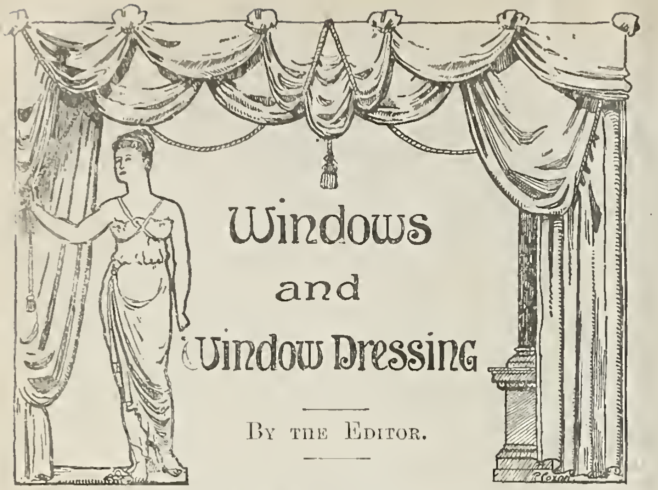
Subscriptions fall due in January, but we strongly advise that new subscriptions or renewals should be posted at once. Our *Diary and Desk-Book* for 1892 will shortly be ready for issue, and all our subscribers for the new year are entitled to a complimentary copy. We cannot, however, guarantee that the edition will not be out of print by the end of the year, and subscribers who put off their renewals after this date run the risk of losing our useful gift.

A fine nugget of gold, weighing 32 ozs., and some rich specimens of antimony were found recently on the Starke River, about seventy miles north of Cooktown, Queensland.



Windows and Window Dressing

By the Editor.

(*Continued from page 94.*)

BROADLY speaking, there are two great orders of window-dressing. The object of the first is to crowd as much as possible into the window; that of the second is to make it representative and ever new.

Under the first order, whatever the stock contains is elevated to a prominent position, and this frequently results in the most baneful incongruities, as in the struggle for front positions a cut-glass scent-bottle lies in juxtaposition with a diamond ring, and a "new" silver thimble beside a delicate miniature; thereby breaking our first axiom—the surroundings instead of enhancing the beauty and special characteristics of the objects, absolutely destroys them. Therefore regard

Avoid overcrowding

as one of the most important axioms. The eye cannot take cognizance of more than a certain number of objects in the field of vision at any one moment, the clearness of any given object being in the inverse ratio of the numbers by which it is surrounded. So that whilst a mass of stock at most serves to suggest or confirm the idea that there is plenty of jewelry, plate, etc., in the universe, it presents nothing specially, and therefore appeals to no special want.

But there is a much greater argument against this overcrowding policy: it is equivalent to showing your hand of cards at the commencement of a game. You have a hand without trumps; the customer has had the opportunity of seeing all your stock in the window, and when he enters the shop he is simply muddled and dazed at the confusion of the window, and expects you to be able to show him something that will reduce the chaos to order. If you turn your face towards the window to get any article—although you are certain it is the very thing he requires—you are met by a "No, thank you; I have seen all that is in the window; haven't you got some others you can show me?" He came in with the full determination of not buying anything which he thinks he has already seen—although in point of fact he may not have seen it at all—and upon failing to see a much larger stock inside than he thinks he has seen in the window, he retires with the idea, "There isn't much in that shop!" The salesman's powers are thus crippled; indeed, the true art of salesmanship is not called for. The window, to a certain extent, is an illustrated price list, and things require little more selling from it than from a catalogue.

I do not say that good businesses are not run with full windows; but there is no house of any importance to-day that is a victim to this overcrowding, as I have here described. The one that comes the nearest to it has also a good stock of trump-cards inside; whilst it cannot be denied that its greatest failing lies in the direction indicated.

Now contrast with this the other order of window-dressing, which may be regarded as the specimen window, ever-changing and ever new, where every piece of stock stands out clear, visible, unmistakable, and beautified. Every morning you can have a change, or, if you like to do as some of the Parisian jewelers do, you can have two changes a day. Customers get the idea that you have a large stock, and if they don't see the exact articles they require, they come in and make inquiries. Then comes the opportunity of the salesman to exercise his skill! An article judiciously introduced secures a customer wholly unobtainable from an illustrated price list. But upon business philosophy, or the art of the salesman, I do not wish to enter on this occasion, only in so far as it is concomitant with the subject under consideration. Whatever the class of your business, the higher, the more rigidly would we enforce the axiom

Change your window as often as possible.

If you have but one style, and that consists of cramming everything into the window, it shortly becomes repulsively monotonous; there is nothing novel or attractive in it. It has been said this is an age of tit-bits: food must not only be got ready to eat, but it must be in tempting morsels, delicately served. Moneyed customers will not wade through the same old maze to find an article each time they require one. The insatiable desire for the novel that is rife is not accompanied by a corresponding spirit of energy and perseverance. They leisurely glide through life, casting but furtive glances around, if perchance something obtrudes upon their notice that is "taking." I do not for a moment say that this describes the experience of every jeweler, but it certainly is the case in the upper strata, and is shared by all, diminishing in proportion as they descend into the commonplace and humble.

We therefore conclude that a window should be a frame and mount for pictures, differing from a painting, frame and mount in that it not only sets off a single picture, but that its principles of construction should be such as to serve as the very best possible frame and mount to the greatest number of articles under the most varied conditions. Use the very best materials you can get, and do not improvise and ape decorations. Do not put a dirty, ill-shaped piece of velvet, with cotton stitches like dog's teeth, across the front of your window, perhaps unsuccessfully strained to make it reach the whole distance, with the effect of making it look like a pair of mother's-make trousers on a boy who has put his legs too far through them.

I have seen stocks that would run into five figures thus disgraced. Let your window express the complete perfect and artistic manner you can do things. Fittings need not necessarily be expensive and elaborate to be susceptible of being made artistic and admirable. If you cannot afford silk velvet at 30s. a yard, surah at 2s. artistically employed can be made very effective.

Of course differently constructed buildings require different window fittings, but for jewelry display we consider a velvet stand is almost indispensable. It is very remarkable, however, what a lack of simple easily adjustable fittings exists in most of the windows in the trade. There is often more time wasted every time a radical change is made in a window than would pay for a good set of fittings. These need not be expensive, but they should be interchangeable; every window should have at each of its ends two parallel upright bars with equidistant screw holes. The stop-studs and screw holes on every bar and bracket should be separated by the same distance that intervenes between the right-up screw holes. If a window exceeds three feet in length a third support should be pendant from the back or centre of the ceiling, or fixed to the floor at the back, susceptible of being lengthened or shortened as the case may be. With these simple fixtures, we shall proceed in our next to give illustrations of windows and draperies.

(*To be continued.*)

Our Letter from the Diamond Fields.

(By Vaalite.)

Kimberley, *Oct.* 26.

It is very rarely, if ever, the case that topics of more diversified nature fill the whole of the diamond fields than just now. Here are groups full busy discussing the Exhibition, its pros and its cons; who ought to be patrons, and what is the value or duty of the function; there another cluster are pulling long faces over the dreadful fire which destroyed our magnificent (for out here) amphitheatre, together with several stores, in a few minutes. It is true the buildings were only wood, and, when once a blaze got hold, with the wind that was blowing, it was only what one might expect. It was a good job it was at 10.30 at night. If the place had been full escape would have been simply impossible, and would have been accompanied by the most appalling scenes. In other quarters may be heard discussions as to the comparative values of different brands of dynamite, and how it ought to be used and transported, as we have had several mine accidents; and away up country a serious explosion while in transit, which blew everything—men included—into atoms. And yet again others are telling their various tales of woes of damage done by water, for it is greatly owing to this that the Vaal River Diamond Company has been reduced to the unfortunate position it is now in, as from quite the early part of the year they were under water some twelve or fifteen feet. This was not got rid of for six months. But there is another thing about this mine, and that is, I cannot help thinking they are pursuing a will o' the wisp in imagining they have diamondiferous blue as bed rock. So far as I am aware there is not the slightest reason to think that the old river at this point ever cut through a diamond pipe, and therefore it is not reasonable to expect to find the blue as the mother rock of the country. Wishes are often the parents of thoughts, as I shall show in a minute or two. In their top stuff they certainly find a few diamonds, the same as can be found in almost any of these old gravels; but as to being in payable quantities, that is quite another thing. During the whole of last year they only found 251 carats, but with the increased energy of working, after the long work at removing water and boulders, they have found considerably better lately. The British United have also been flooded out, and although there are such high personages connected with the mine, they had to realise that natural objects can only be treated in a natural way. Amongst other panic-like incidents that have happened might be quoted the receipt by the North-Eastern Bultfontein of a telegram from London ordering the suspension of hauling. What it was for was a mystery to everybody, and as the company employed about 100 whites and 1,500 blacks it meant something considerable to the neighbouring town; however, orders have been received to go on again. Probably it was thought that as they had 220,000 loads of blue already hauled that further increase for a time was undesirable; but their figures are highly satisfactory, and considering they have some 25,000,000 loads in sight, one would have thought that setting more hands on would have been more likely than stopping hauling. The yield, too, is fairly good, as the following weekly figures will show: 21,600 loads (washed) gave 1,400 carats of diamonds; 12,000 loads, half blue and half yellow, gave 1,600 carats; 10,500 loads gave 1,300 carats, which is about the usual average, and though not a very great deal, is still a paying quantity. Fate grins once more on St. Augustine, however, now that it has been reconstructed, and new capital put into it. I cannot help thinking that it will reach good paying blue. That it is a mine I am certain, from what I have seen; but certainly the composition of the diamond bearing rock varies greatly, and considering this lies away out from the rest, it is no more than one could expect. Suppose it had been the luck of the De Beers to have been struck just on the side of the barren well-named island, and mining had been continued over this extensive area, it would soon have been abandoned. I therefore feel disposed to congratulate those who stick to it, and believe they have a future before them.

At the last meeting of the Griqualand West Diamond Company a dividend of 4 per cent. was declared.

Athough Koffyfontein is turning out 250 to 300 carats a week, which in September amounted to 1,436 carats, at a depth of 40 feet, it is certain they are crippled for want of capital. Instead of £27,000 capital it should have £50,000, and then it would show what it could do. I had the pleasure of seeing a charming fancy-colored stone of 13½ carats of a kind of beautiful pink they found the other day, and for which they refused £500. Prospecting is going on all round; fifteen diamonds were found the other day up the Vaal in sinking for a coal shaft, but fifteen diamonds don't make a mine. Even the great De Beers, with its renowned head, have by this time learned to eat their words and fully realize they have by no means got all the land that possesses diamonds, and are accordingly buying up any farms that look at all promising, with a view to prospecting. The Wesselton have taught them a lesson, from which many others may also profit, for the monopoly cannot possibly be as much theirs in the future as it has been in the past.

* * *

"Gloriana" in her letter in the *World*, of November 11th, has a word or two of interest to jewelers. "It is as natural for women to adore jewels, as for flowers to turn their thirsty petals to a refreshing shower." There is certainly a tone of hope to us about this remark, as while such is the case there will be a ceaseless demand for our ornamental productions, which no adverse edicts of fashion will be able to stop. She further remarks that "to show jewelry in fullest perfection is a physical gift." Here again is our advantage, as while those who have this gift will be ready to use it on all possible occasions, those who possess it not will be equally anxious to do their best to acquire it. In either case, an unlimited supply of jewels will be needed.

As the year draws towards a close a retrospective glance over its course fails to reveal the same degree of prosperity as prevailed last year. As far as the silver and electro-plate trade is concerned, the experience of most firms has been somewhat mixed. Some few, and these of the largest, have been exceptionally well off, but with the many trade has fluctuated between very good and only moderate. This of course must be understood to be as compared with last year, which was an exceptionally good one. As Christmas approaches signs of activity are observable in all the factories, which are lit up early and late. Women and children are kept as long as the Factory Acts will allow, and, on the whole, the forthcoming season has every indication of turning out a fairly prosperous one.

Mr. Fredk. B. Box, valuer and agent for the disposal of jewelers' businesses, has removed his offices from 6, Thavies Inn, Holborn Circus, to larger and more commodious ones at 64, Holborn Viaduct, E.C.

The business formerly carried on under the style of Messrs. Chas. Baker & Son, 90, Spencer Street, Birmingham, will in future be carried on under the same style by Howard Nicholas Baker alone.

The Crystallography of Gems.

By the Editor.

(*Concluded from page 96.*)

The Triclinic System.

The Natural Forms of Axinite.

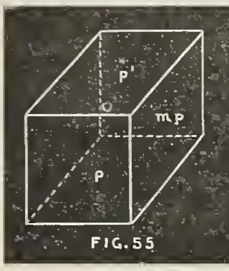


FIG. 55

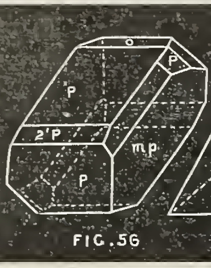


FIG. 56

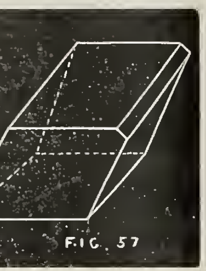


FIG. 57

We are now brought to the concluding crystallographic system; it is called the *Triclinic*, from the fact that all three of its axes are inclined to each other. The angles made by their intersections are dissimilar in different minerals. When they all approach right angles, forms in this system appear very like those of the trimetric, and when the angles are small the resultant crystals resemble those of the monoclinic. With the increase of the obliquity of the axes, crystals assume shapes distinguished by their absolute want of symmetry.

In consequence of this obliquity of the axes, the system consists entirely of partial forms wholly independent on each other, so that there can be neither *planes* nor *axes of symmetry*, nor more than two planes of a kind. The lengths of the axes are immaterial. One is selected as the *principal*; the shorter of the other two is called the *brachy-diagonal*, and the longer the *macro-diagonal*. In reading a crystal the principal axis is placed vertical, and the macro-diagonal so as to slope from left to right. As we have little use for this system, it is not worth while to go into the details of its nomenclature, which must, from the conditions of the case, be very profuse. It has been said that this system was invented to receive crystals that would not fit into any of the others—any crystal of irreducible asymmetry.

Unfortunately for us the axinite has a habit of putting on nearly every face possible in the triclinic system, so that some little knowledge of its details is absolutely necessary. The gem, however, takes its name from a prevailing tendency characteristic of it—of assuming axe-like forms. It was formerly called Yanolite, in connection with its violet hue, but as this color claim does not hold good, the name has long been abandoned. Indeed no hue would describe it, as it usually presents remarkable trichroism—or what I should rather term tri-axechroism—which gives rise to different hues according as it is viewed in relation to the axes. The hues are often cinnamon-brown in one direction, violet-blue in another, and olive-green in a third, the most strongly marked, or prevailing hue, being some tint or shade of clove-brown. It has an extremely brilliant, glassy lustre, both on the striated and non-striated surfaces. The striations are usually regular and parallel, but are frequently subject to interruptions and contortions, consequent upon irregularities of crystallisation.

Axinites usually occur in groups, in which the crystals are unplanted, and not disseminated—say, like garnets—but stand up with thin, clear, sharp edges, and with a generally flattened aspect, which at once distinguish this gem. It might also be remarked that, owing to its brittleness, it very often contains flaws, which, by their interference of light, produce similar phenomena to those exhibited by the minute fissures in opal.

As we previously observed, the axinite is known to occur in nearly all the forms of the system. Fig. 55 is the most simple-looking form; and at first sight it would be mistaken for a trimetric prism; it is, however, nothing of the sort. But to be able to read a crystal of this system correctly, it is necessary to get a clear idea of its primitive octahedron, and derived prisms, which differ from those of other systems described (compare Fig. 28) in that all three axes are inclined, so that faces do not stand at right angles, owing to which the dome faces often present the appearance of basal planes, and *vice-versâ*. Thus in Fig. 55 m-p being a macro-pinacoid, P looks as though it ought to be a brachy-pinacoid, and 'P as though it ought to be a basal plane. Such, however, is by no means the case. Comprehension of this form is best obtained by reference to the typical rectangular prism, in which the front must be considered to be higher than the back, so that 'P in reality is a pyramidal face. Further the face m-p must be considered to be much larger, and meeting another face coming from the other side of the prism, which two faces have been truncated by this face P. So that P is a prismatic face, and not a brachy-pinacoid.

Fig. 56 shows the same form with the additions of new faces; 2 'P is another pyramidal face, similar to 'P, in which case the vertical axis has been lengthened. At the back is a plane O, which represents the basal pinacoid, and a continuation of the line at its left side would show the position of the basal plane if extended across the crystal, and consequently shows that 'P is a pyramidal face. The small five-sided face at the right-hand top (P'), has its base parallel to this restored line, consequently it is a dome face, whilst the long face which truncates the macro-pinacoid (m-p) and the pyramid ('P) is a macro-pyramid.

But notwithstanding the diversity of forms under which this gem appears, Fig. 57 is its typical and by far its most common form, whose axe-like aspect has earned for the gem its name. It will be seen that each of its six faces is a rhomb; sometimes the edges are truncated with either one or more faces, as on the top left; at others they are not, but meet in their characteristic sharp edges; but the flattening from front to back causes the top angles to assume still sharper edges, thereby giving it its axe-like form.

The Natural Forms of Cyanite.

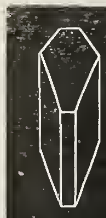


FIG. 58

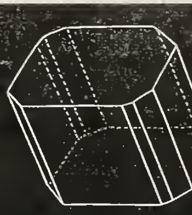


FIG. 59

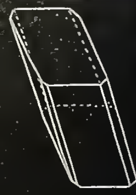


FIG. 60

As Cyanite is often employed as a gem, it may be advisable to describe its crystallographic form; not so much, perhaps, from its own importance as for the purpose of preventing its being mistaken for sapphire, which gem in many respects it resembles, and for which it is not infrequently sold.

It usually occurs in long six-sided prisms, and might therefore be mistaken for corundum. But it will be noticed that whereas in corundum the angles are all 60deg. and its form equilateral, in cyanite, owing to the obliquity of the angles, the outline is not symmetrical, but has the appearance of having been knocked on one side. Fig. 58 is a representation of a crystal now before me of a dark ruby color, which might, perhaps, at first sight be mistaken for that gem. The basal plane, however, does not lie at right angles to the prism, but is inclined to it; nor is the obliquity confined to this plane. Fig. [illegible] .ws the obliquity in a basal section, which immediately separates it from corundum. Crystals almost always occur in groups lying upon their sides; the prisms are more or less flattened, usually very much so. They have a distinctive pearly lustre, they are longitudinally striated, and sometimes cross-hatched. They usually show a highly pearly cleavage face, which, instead of being basal or rhombohedral, as in the corundum, the principal cleavage runs parallel to the macro-diagonal. Occurring in amassed groups, basal planes are rarely seen, but imperfect cleavage fractures. The cleavage along the base is quite dull and very imperfect compared with that along either of the other directions. Pyramidal faces are always absent.

In Figs. 59 and 60 the large front planes are those of the macro-pinacoid, those at the sides are brachy-pinacoid, and between them at each corner another plane or planes intervene, pairs being developed at diagonally opposite corners. These figures also exhibit the asymmetry of the forms in this system. It will further be observed that the angles between the right brachy and macro-pinacoids is different from the angle between the same faces on the left.

Fig. 60 shows a form where the macro- and brachy-pinacoids are nearly equally developed, and the prismatic faces hardly visible; this, however, is not common. The more usual form is very much compressed like bundles of laths.

For the sake of simplicity all through this series I have purposely avoided all reference to actual goniometric measurements; altho' they are the bases of all exact crystallography; indeed it would be regarded by many as an impossibility to teach an essentially mathematical subject without reference to the science upon which it is based. But it is not the higher branches of the science that have been aimed at in these articles, but to put the trade in possession of sufficient facts to prevent their being mistaken in the nature of an uncut gem.

We may now, in response to numerous appeals, inform our readers that these articles, further illustrated with a well-executed series of plates taken from some of the finest specimens in the world, with chapters on goniometric measurements, pseudomorphism, non-crystalline substances, etc., will shortly be published as the first volume of a series of cheap, reliable, and useful *Trade Handbooks* we propose publishing.

The Cardiff "Loving-Cup."

THE loving-cup presented by the Marquis of Bute to Cardiff is a splendid piece of work, and so much off the common line of things that it deserves the fullest description to be accorded to it. It is the entire work of Messrs. J. Crichton and Co., 47, George Street, Edinburgh, upon whom it reflects the greatest possible credit. The cup stands thirty-two inches high, is in silver richly gilt, with fine gold shields, and profusely jeweled with diamonds, sapphires, amethysts, rubies, emeralds, carbuncles, and aquamarines. In the top is a figure representing Cardiff wearing a mural crown in diamonds, the face, hands, and feet in life colors, the right foot resting on a block of coal, and the left hand grasping a rudder. At her feet, seated among water-lilies in enamel with diamond centres, is the figure of Sabrina, the nymph of the Severn, also with the nude parts of the figure colored. On the base are three figures representing the three rivers Taff, Ely, and Rhymney in flesh color and gilt, each holding the emblematic urn of river-gods, out of which pours a stream of water in rock-crystal. The figures are also seated among water-lilies in white enamel with diamond centres, while the leaves are made of green gold. The Taff, as representing a large river, has the hair and beard in silver, while the other two rivers have the hair gilt, as representing young men. Round the stem of the cup coils the Red Dragon of Wales, studded with carbuncles, the claws set with brilliant diamonds, while the eyes are of bright emeralds; the dragon is represented as supporting the body of the cup. The body of the cup is in pure Italian style of an exquisite form, and bears on one side a shield bearing the Cardiff arms, and on the other the shield of the Marquis of Bute, beautifully enamelled. The two handles are finely modelled in the Florentine style, with winged caryatides, and pendant from each is a large drop amethyst. The harmony of the whole thing is complete, the various gems being grouped together in the happiest manner.

The Spectacle-Makers' Exhibition.

SINCE the inception of the idea of this exhibition, we have tried the utmost in our power to further it. From the first we have pointed out the advisability of not limiting it to spectacles, but to cover the whole field of optics. We must say we were a little disappointed some nine or ten months ago that the idea did not develop into an existing fact. We had numerous talks with leading opthalmic surgeons and editors of medical papers, and as an outcome of this, prepared an article ready for publication as soon as anything definite appeared; but alas! the article had to remain unused month after month, so that at last we decided to publish part of it only. Judge our surprise then to read in our young contemporary, the *Optician*, the accusation that we had copied their original ideas. We do not say we can lay claim to them entirely, as they were in part suggested by our medical friends; but their history shows they were in no way connected with the *Optician*. The current number of the same paper gives the following:—"It is intended to make the exhibition an optical one in the general sense of the word, and not a mere exhibition of ancient and modern spectacles. . . This was our advice to the company in the very first number of the *Optician*, and we are pleased to note the company has adopted our views in the matter." That's funny, isn't it? considering we expressed the same views before the paper was born! We do not object to a journal displaying interest in a trade, but rather admire it; but at the same time the editor must remember there are others perspiring along life's road beside himself, or else, according to his own theory, we might not get any rain, of which we have had such abundance this year.

At last, however, there is an absolute prospect of the exhibition taking form. At a dinner of the company, which took place on the 12th ult., at the "Albion," Aldersgate Street, attended by a number of distinguished guests, the Lord Chancellor alluded to the forthcoming exhibition, which will show what the company had done for the crafts it represented, and advocated its extension to all instruments connected with the physical phenomena of light. Sir Polydore De Keyser in replying, stated that the company had fully made up their minds to hold the exhibition, and that its progress had only been impeded by the unfortunate illness of one or two of the members of the livery elected to act in the matter. It thus becomes evident that we may expect the proposed exhibition will now soon take form.

*

The gold prospects in Western Australia are still very favorable. A colonial geologist has just returned from there bringing back an exceptionally good report. The three reefs, Parnell, Home Rule, and Mystery, are those upon which he reports. Two men obtained a sackful of material worth over £2,000. For at least a mile and a half on one reef gold is present. One piece of quartz weighing 25 lbs. yielded 98 ozs. of gold.

Mayoral Chain and Badge for Mansfield.

His Grace the Duke of Portland is about to present to the Borough of Mansfield, in his capacity as Lord of the Manor, a gold badge and chain of office to be worn by the Mayors of the new borough on official occasions.

It is a large circular badge with centre circle and four side medallions, the centre one being devoted to the arms of the corporation, which have been derived in large measure from the arms of the Dukedom, but with the differences necessary in such cases. The cross moline of the Bentinck family, differenced by having a *fleur-de-lis* termination to each end in gold, separates the four divisions of the shield, while the head of the white hart on a ground sable occurs in the first and fourth quarterings. The second and third quarterings are occupied by hanks of cotton, referring to the trade of the town.

The arms are given in correct heraldic colors. On either side of the arms are the Rose, Shamrock, and Thistle, representing the United Kingdom. The border round the shield containing the arms has the motto of the borough—*Sicut quercus virescit industria* (Industry flourishes as the oak) in gold letters on an enamelled ground. The crest, which is given in the small circle at the top of the badge, is the famous Parliament oak represented in its full vigour. Beside this are two stars, and in front of it are two cross crosslets fitchè in saltire. A wreath of oak, relating to the forest of Sherwood, around the badge in enamel, gives a beautiful variety to the chain. The lower medallion on the badge is occupied by the arms of the County of Nottingham, in correct heraldic colors. The side medallions severally contain the two distinct crests of the Portland family—the Bentinck crest being two arms gauntletted issuing from a ducal coronet, each holding an ostrich plume—the nowed snake of the Cavendish family being in the other medallion.

On the reverse of the badge is given the following inscription:—

"This chain and badge of office was presented by His Grace the Duke of Portland, Lord of the Manor, etc., to the Borough of Mansfield, in the year of its incorporation, 1891."

The badge depends from the centre link of the chain, which, as is usual in such cases, contains the arms of the Lord of the Manor. The lions (supporters) are beautifully modelled, one being finished oxydised on gold, a color the makers have lately introduced with great effect. The centre link is beautifully arranged, the whole being held together by mounts which are almost invisible. Two civic maces support the centre link, and the letter "M," the initial of the Borough of Mansfield, makes a good connecting member, forming altogether, with the links, a rich decorative band, without being too obtrusive.

The larger links have suitable shields in harmony with the rest of the design, and over them is a mural coronet to indicate the mayoral office. There is a shield on the reverse for the names of the mayors, while the obverse is so made that it can be taken off by the makers from time to time to enamel the arms, crest, or monogram of the mayor for the time being. On each side of the front of the shields appears sprigs of oak, thus carrying out the motive of the design.

The commission to supply the chain and badge was given to Mr. W. H. Jolly, of Mansfield, who entrusted the order to Messrs. T. and J. Bragg, of Birmingham, and the work has been carried out in their finest style.

The gold jeweled snuff-box, the value of which was £1,000, presented by actors and managers to H.R.H. the Prince of Wales on the occasion of his Jubilee, was manufactured by the Goldsmiths' Company, Regent Street.

Key for Wednesbury Art Gallery.

Another very elaborate piece of work by the same firm as the above is the key that has been manufactured for presentation to the Mayor of Wednesbury on the occasion of his opening the new art gallery. The design is a rich Renaissance, and strictly accords with the character of the building. A richly-fluted column rises from the ward of the key itself, dividing into floriated scrolls as it approaches the head, and supporting an enamelled shield, one on each side, while two important side scrolls support a projecting and arched cornice, which gives a forcible and distinctive character to the design. Above the centre of the arch appears the crest of Wednesbury—the blast furnace, having the symbol of Mars in the front, with flaming rays at the sides. Seated in graceful attitude on each side of the cornice are two charmingly-modelled figures of Cupids, one with sketch book and brush in the act of regarding the scene before him, representing Art; the other, pensive and studious with compasses in hand, as if considering a problem, representing Science.

The shields are supported by a series of wrought golden scrolls, which are intermediate between the bolder ones forming the main features of the design, and which, being open, give a lightness and elegance to the whole. The central need for color is supplied by the enamelled shield of Wednesbury, on the obverse, and by the ribbon issuing from festoons drooping from the two side scrolls. The reverse is equally elaborate, the arms being those of Mr. J. H. Thursfield, the present mayor, with his motto also in enamel. The ornament of the key is of a most careful character, every part being carved by hand, thus giving effects not otherwise obtainable, and the rich tint of the gold harmonises well with the distinctive colors of the heraldic enamels.

The key is supplied by Mr. Westley, jeweler, of Wednesbury, in whose shop it will be exhibited previous to presentation.

The Markets.

DIAMONDS.

In London, during the early part of the month, chiefly through the demand of Amsterdam and Antwerp houses, rough was brought up rather readily, although the supply was by no means behind, and prices a little stiff ruled. As the month wore on, and the foreign markets became supplied, prices eased a bit.

In Amsterdam, during the early and middle part of the month, business in polished stuff was brisk and prices sustained, but fell off a bit within the last few days when the foreign clique, which are always ready to take advantage of any opportunity, tried to bring down the prices. There are numerous orders on hand for Russia and Northern India, but owing to the low rate of exchange of the rouble they cannot be executed. As soon as there is any improvement in the rate of exchange great activity will follow. Factories are running full time, as the demand from America and France for small middle class stuff is fairly good.

In Paris diamond-setters are all in full swing; and the United States have bought freely, considerably augmenting the holiday trade, which has been very good. Owing to the project of imposing a government tax on polished diamonds at their entrance into France (which up to the present have been admitted duty free), some amount of local speculation has gone on in order to get a good stock in hand should this become law. This duty is mainly advocated by the Jura and French cutting houses. It may, however be said that the local Syndical Chamber of Diamonds and Precious Stones, at their last meeting, voted strongly against it. They pointed out a fact, which few protectionists realise, viz., that the tax would naturally drive out foreign buyers from their markets to others, where diamonds are free of duty.

SILVER.

This month we have to note the lowest point reached by silver since 1889; the quotation for bars in the market on the 7th inst, being 43½d.; it has since recovered a trifle to 43¾d.

The fall has been attributed to the defeat of the Free Coinage Party in the United States, but some weight must also be attached to the suggestion that over supply may be an important factor in the decline of the value of the white metal. The enormous production of the Australian Broken Hill Mines, averaging something like 200,000 ozs. per week, together with that of the mines of the United States and Mexico, some of which have been unusually active, have put into stock more silver than there is a demand for, and only till the call exceeds the supply can we hope for any improvement. It is expected that India and the Balkan States will shortly require silver for the purposes of trade and coinage, and Spain and Portugal probably may also require silver for the latter purpose. The satisfaction of these demands will no doubt cause some slight upward tendency.

COPPER.

Copper has been easier this month and has declined from £46 5s. at the commencement, to £45 15s., the present price.

TIN.

Tin has been firmer, rising from £89 5s. at the commencement of the month to £91 10s. on the 14th; but has since drooped to £90 15s.

LEAD.

Lead has been dull and lower, commencing with £12 5s. it has steadily fallen to £11 12s. 6d., its present figure.

SPELTER.

Spelter is quiet with an easier tone; there being a slight fall from £23 7s. to a present quotation of £23.

QUICKSILVER.

Quicksilver has been dull and quiet at £8 (Rothschilds'), but has nevertheless maintained that price.

PLATINUM.

The skying of Platinum was only transient as we suggested at the time, and is now steady at about 45s.

MOTHER-O'-PEARL.

There was a large supply of mother-o'-pearl for the fifth London auction of the year, and a very active demand, prices on the whole showing some improvement. Queensland sold again remarkably well; some fine white shells at higher prices than previously paid, but clean medium and chicken were no dearer, and some mixed yellowish shells sold cheaper. West Australian sold generally briskly at firm prices. Sharks Bay sold very well, the fine lots at much higher prices. Black-edged in fair demand; fine quality of good color dearer. Mixed dull shells cheaper, and not of ready sale. Egyptian were not plentiful, and prices are fully 5s. dearer; also Bombay, which are scarce. Manila were very firm, and pickings and chicken higher. Macassar dearer. Mussel 5s. higher. Panama 3s. dearer for clean sorts, but grubby neglected. Japan, no good shells offered. Corossos nuts are again higher, and extreme rates paid for the few offering. £13 asked for Guayaquil. The next sales will be 8th December.

TORTOISESHELL.

There was a larger supply for the tortoiseshell sales than for many years—a total of 7½ tons weight. There was, however, generally a good competition, and the high prices of the previous auctions were nearly maintained for West India, Havannah, and Nassau shell; some lots of pickings and chicken were rather lower. Hoof sold about firmly, but yellowbelly of good quality advanced. Fine selected was easier. Zanzibar and Bombay sorts rather easier; Bombay pickings dearer. Singapore and Macassar sold well, the quality was good. Sydney steady. Loggerhead (West India) sold well.

IVORY.

The October sale commenced with a fair competition, and lasted five days. East India soft large and medium teeth were £2 3s. per cwt. lower; hard, irregular, but average last sales rates. Billiard-ball pieces steady to £2 5s. per cwt. lower on the smaller sizes. Bagatelle £2 5s. per cwt. lower. Cut points for balls soft £2 3s. per cwt. lower; hard, steady; undersize and defective points unchanged. Cut hollows, larger sizes, rather dearer; small steady; hard firm; Cores, none offered; ball scrivelloes, £2 4s. per cwt. higher; Cape, none offered. Egyptian Malta: Soft, steady, to £1 2s. per cwt. lower; hard declined £2 4s. per cwt. West Coast African: Large teeth, steady, to £2 lower; small and medium, £2 3s. lower; scrivelloes, £2 4s. per cwt. lower. Bangle teeth steady to £2 per cwt. lower.

BOARD OF TRADE RETURNS.

Imports.—The total value of clocks and parts thereof imported during October, 1890 and '91, are as follows:—

	1890.	1891.
France	£13,950	£12,824
United States	12,614	8,158
Other Countries	28,428	23,074
Totals	£54,992	£44,056

Showing a decrease of nearly £11,000, or 20 per cent.

The figures for the year now stand (up to October 31st.)

	1890.	1891.
From France	£142,542	£128,573
From United States ..	86,230	84,617
From other Countries ..	180,096	191,408
Totals	£408,868	£404,598

From which it is obvious that far less French Clocks are being imported, and more from other countries, principally from Germany and Austria.

The total value of watches and parts thereof imported during October, 1890, was £57,408; for October, 1891, £63,690, showing an increase of £5,290.

The figures for the year 1891 up to October 31st, are £519,269, and for 1890, £580,888.

The Montana Ruby Mines.

MANY people have been a little surprised at the attitude we took in regard to the Montana Ruby Mines, and at the difference between our opinion and others. We reply that in each case the opinions were founded upon the knowledge of the persons expressing them. We have been in touch with the Montana Mines for ten years, and know considerably more about them than has yet been published. We have received the warmest congratulations from America, from those who have had the opportunity of making a special study of them, for what we have said in regard to them. Mr. George Kunz has been kind enough to send us his report on American gems for the census bulletin, in which he says in regard to the sapphire: "Of the corundum gems (sapphire, ruby, and other colored varieties), *no sapphires of fine blue color, and no rubies of fine red color have been formed.* The only locality which has been at all prolific is the placer ground between Ruby and Eldorado bars on the Missouri river, sixteen miles east of Helena, Mont. Here sapphires are found in glacial auriferous gravels while sluicing for gold, and until now have been considered a by-product. Up to the present time they have never been systematically mined; in 1889 one company took the option of four thousand acres of the river banks, and several smaller companies have since been formed with a view of mining these gems alone or in connection with gold. The colors of the gems obtained, although beautiful and interesting, *are not the standard blue or red shades generally demanded by the public*. Further, in a private letter Mr. Kunz says, "I know, and the Montana people all know, that nothing, even a half carat in weight, true ruby red or true sapphire blue has ever been found in Montana, although I have seen inferior colored and native Ceylonese-cut sapphires offered as Montana sapphires by Helena and Colorado dealers." In this latter fraud we can parallel Mr. Kunz's experience, as we have on several occasions been pained to see the love of mother country so imposed upon by fellow-countrymen. We have been shown by Americans visiting this country sapphires and rubies, which they treasured with commendable national pride, as being real American gems, either got direct from Montana for them, or else purchased by them at that place. Sometimes they have been just as they left the Cingalese hands, and at others the fronts have been re-cut. Mr. Streeter, Mr. Mallaby-Deeley (a gentleman said to be interested in the purchase money), and the vendor are now on their way out to inspect the property. The nature of their report we may anticipate.

* * *

HIDDENITE TO THE FRONT.

Mr. Hidden, the discoverer of the gem that bears his name, is working hard at the Emerald and Hiddenite Mines, Alexander Co., North Carolina, where he first found his beautiful addition to the gems. A shaft fifty feet deep has been sunk through gneiss, and a fairly good number of hiddenites, together with the yellow spodumene, have been found. A company is now being organised by H. A. Swartz to manufacture hiddenite jewelry. The gem is meeting with a great demand, and prices for it run side by side with diamonds.

A SUBSTITUTE FOR BOART.

A new substitute for boart has been brought out by an American firm, called carborundum. Several lapidarists who have used it speak highly of it.

ROSE-COLORED GARNETS.

It is said that the old locality for these rare gems has been rediscovered on the Rancho de San Juan Morelos, Mexico. This is the locality of the one described twenty years ago by Daubrèe.

A LARGE IDAHOAN OPAL.

A fine opal of 100 carats has recently arrived in New York, from the North American Gem Opal Mining Co's Mine, Idaho. It is said to be a highly lustrous stone of splendid colors.

MEERSCHAUM IN MEXICO.

News is to hand of unheard-of wealth of the above somewhat rare commodity, about twenty-five miles north of Silver City. Slabs five feet long are talked about; the seam averages eight inches in width. With such a supply as this there is doubtless a future for meerschaum at present not thought of.

FINE TURQUOISES.

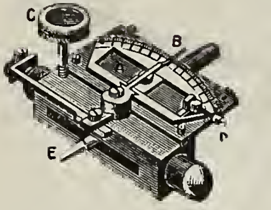
Santa Fè is reported to be turning out some fine turquoises of cerulean blue, the color so greatly admired. Most of those in the market are either dark, or shaded with green, the latter in part produced by the fire employed by the Indians in mining for them.

PRODUCING PEARLS ARTIFICIALLY.

A report from Thursday Island states that some experiments initiated two years ago in that place, in the direction of causing the *Meliagrina*, or pearl oyster, to produce pearls by artificial treatment, have proved substantially successful.

Things New and Noteworthy.

NEW JEWELING TOOL.



There are at the present time before the public several jeweling tools. The annexed illustration shows an automatic one invented by J. L. Hutchinson, La Porte, Ind. To cut setting for a jewel, place tool in tail-stock and taper in head of lathe and see that corner of cutter E comes to centre. If it does not, turn screw D back or forward until it comes to centre. Now drill hole half as large as the jewel you wish to set; then place jewel in slot A, and bring index finger over until jewel is tight in slot A, being careful to have jewel in centre of slot and not to one side. Now turn set-screw C up tight, and tool will cut setting exact size.

TESTING VISION.

Of the various instruments that have been brought out for testing the sight there is certainly none, so far as we have seen, to equal the opsiometer brought out by Messrs. Raphael and Co., Oxford Street, W., which in principle is simplicity itself, and can be worked by any intelligent person. In form it is a small mahogany cabinet, 13 in. by 9 in., which can either stand upon the counter or upon a tripod made expressly for that purpose; under either circumstance its ornament is only second to its use. There are two eye pieces through which the patient looks and attempts to read what he sees behind; until he is successful handles at the sides are turned. When he is able to read satisfactorily two numbers, etc., appear at apertures in front of the instrument, showing, firstly, the nature of the lens required, whether concave or convex; secondly, whether they are both alike or odd; and, thirdly, their focal length. Any sight from five to forty-eight convex, and from 0000 to twelve concave can be tested by this instrument, and as both eyes work independently, it can rightly prescribe for eyes simply impossible by many other methods; and, lastly, the price of the instrument complete is only 45s.

We recently paid a visit to the showrooms of Messrs. Townsend and Co., art metal workers, 62, Holborn Viaduct, and Birmingham. We are extremely sorry we did not have that pleasure many years ago, for they exhibit a large number of articles of a class that we have taken a great deal of fruitless trouble to obtain. Prominent amongst the things that we were very much struck with was their magnificent selection of metal clock-cases, which display a great deal of taste, are well executed, and represent numerous styles of art. They are usually in polished brass or copper with ivory dials, and in sizes from a few inches high suitable for boudoir, to massive twenty inch suitable for bracket chimers. In many instances they have employed inlaid Japanese plaques with very beautiful effect. On a future occasion we purpose alluding to other of their productions; meanwhile we strongly advise our readers to pay them a visit.

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In the Scarborough County Court, Mr. H. Weissbeck sought to recover £15, value of a diamond ring sold to Mr. Hodgkin, of Horsgate Lees. Since the day of sale Mr. Hodgkin died, and as there was no evidence of the ring having been delivered, his Honor gave a verdict for the defendant with costs.

LETTERS TO THE EDITOR.

"IS IT LAWFUL TO ADVERTISE?"

To the Editor of The Watchmaker, Jeweler and Silversmith.

Sir,—I am highly interested by your note in last month's journal concerning advertising and the trade. I only wish I had had the moral courage to strike out years ago and I should have been a rich man now. The class of goods I manufacture are sold in the very best houses in the trade; but of course they cannot take many, and their wants could be supplied with the work of half a dozen workmen. Now it is an undeniable fact that I produce some of the finest goods of their sort in the market, and yet, because they are good enough to go into the best houses, I am debarred from making my business known, and so extend it. I often wonder how long this state of things will last, and if I were a young man again to-morrow, that day should break up this dog-in-the-manger autocracy. My advice to every young man is make yourself known, take profit by my experience, don't stop in the background for the benefit of a few, but have full credit for what you produce.

Yours, etc., "Too Late."

Sir,—I quite agree with your remarks about advertising ones business. I am sure you will admit I make some of the finest watches in the kingdom. The other day I was sent for by a gentleman in hot haste, to whom I hurried in expectation of an order. When I got there (he must have thought I was some school-boy) he demanded an explanation of me, how it was that a watch had been brought into his shop to repair with my name on? What business I had to let my name appear in public, to whom I ought to be entirely unknown? And upon pleading my right to use my own name he informed me he should close my account.

I enclose my card and remain yours, etc.,

"Live and Let Live."

The following is an extract from a private letter from one at the head of the jewelry trade in America.

"On page 87 of last month's journal I notice a little note as to lawful advertising. I must say that when the English jewelers' papers are compared with those published in America, of which up to the present time we have three or four weeklies, several monthlies, and recently a daily, which up to the present have apparently flourished, it seems to me that you have good work before you in converting some of the English manufacturers to think as their American brethren do."

The Quality of English Watches.

SOME interesting correspondence has recently been going on, which will show the trade what a jealous champion they have in Mr. Tripplin. We first have his letter to the editor of the *Journal Suisse d'Horologerie*, as follows:—"The October number of the *Journal Suisse d'Horologerie* reaches me to day, and in the course of your talented articles upon the exhibition of watches, etc., in Paris in 1889, I notice an error which it is my duty to point out to you. You say that the proportion of recompenses gained by Great Britain is 73·3 per cent. This would be true if the number of exhibitors had been given correctly, but that has not been done. The fact is the English watchmaking section was composed only of eleven exhibitors, deduction being made for one outside competition, and that these eleven exhibitors (the pick of the trade) carried away eleven awards, in addition to eleven diplomas as collaborators. This exceptional fact, so worthy of remark, changes the proportion cited from 73·3 per cent. to 100 per cent., and in all justice to this section I ask you to correct this error. I would remind you that I was the organiser of this section and the judge of it. From thence comes my knowledge of the facts, which are, moreover, proved by the French and English catalogues."

Our Swiss contemporary replying to the foregoing letter says: "We accede voluntarily to the request of the honorable Mr. Tripplin. We add only for the justification of the figures quoted by our journal that they have been borrowed textually from an official report of the Swiss juror, and, moreover, the official catalogue puts as 13 and not 11 the number of English exhibitors. Quite recently we received the report, equally official, of Mr. Paul Garnier, member, like Messrs. Tripplin and Brandt, of the International Jury for Watchmaking. His figures are in accord with Mr. Tripplin as far as England is concerned; they differ again for other countries from those of Mr. Brandt. Also we believe that we shall do well to give again the comparative table of awards which results from the report of Mr. Garnier. In order to get at the proportion, if we deduct for the number of the exhibitors that of the houses not in the competition, we shall find that France has obtained 72·9 per cent. of the rewards, Switzerland 83·9 per cent., and Great Britain cent per cent. But as far as this goes, United States, Roumania, and Russia should be credited equally with this last result also; but we believe as far as this goes, the comparison between countries which have a few exhibitors and others of which in one case 147, and in another 280, is hardly possible. We have certainly laid stress upon the superiority and the variety of the products exhibited by England to allow our honorable correspondent to permit us to consider Switzerland as having come out of this international tournament first, as far as regards the proportion of awards; there is no place, moreover, to accord to these figures more importance than they possess."

Silversmiths' and Jewelers' Cricket Club.

The second annual smoking concert will be held at the Freemasons' Tavern, Great Queen Street, W.C. (large hall), in aid of the Silver Trade Pension Society, on Monday, the 7th inst., Mr. J. M. Garrard in the chair. The stewards on this occasion will be Messrs. W. F. Anderson, Howard Barnard, T. H. Brinton, C. Comyns, S. Drayson, F. Eady, A. S. Harris, W. A. J. Hickes, R. E. Hill, H. Pearson, W. Radcliffe, A. T. Slater, J. W. Thomas, C. Warwick, E. H. Wellby. The concert will be under the direction of Mr. James Kift. Tickets can be obtained of the stewards, 1s. and 2s. 6d. each, or of the hon. secretary, Mr. C. J. Hill, Jun., 510, Oxford Street, W. We trust the trade will give this grand old institution all the support they can, as it in every way deserves it. Whilst the cricket club, while it is their innings, is to be congratulated upon thinking of others.

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IN the optical trade specially, and all the allied branches, business is in a very satisfactory condition. Spectacles of all sorts are in good demand. Thermometers and barometers are being produced in novel patterns. Foreign trade is also better, there being numerous good large indents to hand.

MR. JOSH VERDIN has given a sum of £20,000 for the establishment of technical schools at Northwich and Winsford.

The Japan *Herald* is the authority for the figures of gold output in Siberia from 1834 to 1887 inclusive—30,000,000 ozs., £120,000,000, and this with but little machinery, efforts rudely systematised, and stealage. When the great Siberian railroad, to which we have previously alluded, is completed from the Caspian Sea to Vladivostock, on the Pacific, the output of Russian gold will be greatly increased.

In and Out the Courts.

At the Marlborough Street Police Court, November 2nd, John Daniells, 32, described as an art dealer, of York Street, Hackney Road, was charged, on remand, with stealing a diamond brooch worth £27, and belonging to John Vander, a jeweler, of New Bond Street. Mr. Vander said that on the 18th of December last Daniells entered his shop with a woman, and after inspecting some diamond brooches, asked to see one of a particular form which he had not in stock. Going to the safe and leaving an assistant at the counter, he (Mr. Vander) procured some diamonds suitable for such a brooch. Daniells, however, said that he would have to consult another person upon the matter, and left the shop with his companion. A few minutes later a lady, whom he knew well as a customer, and who had been in the shop during a part of the time that Daniells was there, returned to make a communication to him, which induced him to look at the brooches which he had been showing. He then found that one was missing. On the morning of the 4th Oct. Daniells called again, when, by a curious coincidence, the same lady was again present. He (Mr. Vander) complied with his request to be shown some brooches, and kept him in conversation until a policeman was fetched. Police-constable 208 C said that when he took Daniells into custody, he said, "I know nothing about it." Subsequently he denied that he was ever in the prosecutor's shop in his life. The prisoner, who was also charged with stealing a diamond brooch worth £23, from Messrs. Roland and Fraser, Jewelers, of Regent Street, on September 25th, by means of a similar pretence, pleaded guilty, and Mr. Hannay sentenced him to two consecutive terms of six months' imprisonment.

Messrs. Kendal and Dent, Jewelers, 106, Cheapside, recently sought to recover £4, alleged to be due for a watch supplied to the defendant, Mr. H. Gravell, Larkhall Lane, Clapham. The defence was that the defendant was only an agent for the plaintiffs. The watches were not sold individually to the defendant. The plaintiffs' solicitor said the defendant was not their agent. He bought the watches out and out. The learned Commissioner said he was very much inclined to think the defendant was only an agent. Subsequently the plaintiffs were non-suited. The defendant's solicitor asked for costs, but the learned Commissioner declined to allow them. The plaintiffs' solicitor said they had agreed to withdraw the action, each party paying his own costs, but the defendant declined. A non-suit was then entered, without costs.

A curious circumstance transpired at the hearing of a case, when a Jew, named Mark Rubenstein, was challenged by a fraternal Yid that he did not possess a watch, upon which he immediately produced one. As this turned out to be a gold one bearing the monogram T H O B and the crest of the Beresfords, the magistrate felt it necessary to have further inquiries made about it.

At Horsham County Court, November 17, Mr. Dench, Watchmaker, Horsham, sought to recover £1 for work done from William Willer. It appeared an agreement had been made with the defendant to repair his "watches, clocks, etc.," for 10s. a year. Plaintiff said he had done the repairing for three years, but had only received payment for the first year. Defendant denied that plaintiff had done anything for him since October, 1888. Plaintiff agreed to do the work for 10s. a year, and when witness took him a certain article he "wanted 8s. or 9s. to send it to Germany, or Italy, or somewhere," whereupon witness had it done by another watchmaker, who had worked for him ever since. Plaintiff: It was a musical-box. I never said anything about repairing musical-boxes. Defendant: He agreed to repair everything, and then when I took him a musical-box he "jibbed" at it. His Honor suggested that "etc." might mean musical-boxes, but plaintiff said it meant brooches. William Baker stated that he had repaired watches and clocks for defendant since 1888.—Defendant held that plaintiff broke his contract by refusing to repair the musical-box. The case was eventually adjourned till next Court, so that further evidence might be brought as to whether any work had been done by plaintiff for defendant since 1888.

An important case was decided by Mr. Justice Charles on November 2nd, in which Messrs. Chapple and Mantle, the well-known silversmiths of the Strand, sought to recover £1,380 for jewelry supplied to the defendant, Mrs. Fletcher (who was sued as a married woman having separate estate at the time of entering into the contract). The jewelry in question was delivered to Mrs. Fletcher about November, 1890. The defendant, William Fletcher, denied that the goods were purchased with his knowledge and consent, and his wife pleaded that at the time of the contract she was a married woman not possessed of any separate property. A petition in bankruptcy had been presented against the defendant, William Fletcher, in April, 1891, and he was subsequently adjudicated a bankrupt. The plaintiffs' counsel, in his opening, said he should offer no evidence against the defendant, William Fletcher, inasmuch as he was a bankrupt; but with respect to Mrs. Fletcher he submitted, from her answers to interrogatories, that at the time of the contract she had separate property (in the shape of other jewelry previously purchased), with respect to which she must be deemed to have contracted with in the case of "Bonner v. Lyon" (38 W.R., 541). The defendant's counsel submitted that there was no evidence that at the time of the contract Mrs. Fletcher had any such separate property. The whole of the jewelry formerly obtained by her had been disposed of before this contract was entered into. The defendant, Mrs. Fletcher, was then called, and stated that at the time of this contract she had neither the goods previously purchased, nor the proceeds thereof, in her possession. In cross-examination she admitted that she had pawned these goods and had had similar transactions with Messrs. Benson, Mappin and Co. and others. She had vouchers for amounts received from the pledging, and paid away, but not with her. At the time of the contract now sued on she had neither any of the jewelry which was obtained from those firms nor any proceeds thereof. The defendant's counsel then contended that, whatever the judgment against the wife, he was entitled to judgment with costs with regard to the husband, although he was bankrupt ("Guy v. Churchill," 35 Ch. Div.), inasmuch as the plaintiffs had chosen to proceed against him up to the trial, and had done nothing to obtain a stay or discontinuance of the action. Mr. Justice Charles gave judgment in favor of William Fletcher, and against Mrs. Fletcher with costs.

Maurice Woolfe surrendered to his bail at the Central Criminal Court, November 18, to an indictment charging him with having made a certain false declaration. It was stated that foreign plate, unless of a certain standard, could not be imported into this country unless it was for the private use of the person importing it, and in the latter case it was necessary that a declaration should be made. The defendant in April last imported a large quantity of Dutch silver goods, making the declaration that it was for his own use. He, however, sold it to a dealer in Long Acre. Mr. Cock, Q.C., urged, in defence, that the silver was very little below the standard required, and that defendant had sold the plate for a relative in Holland. The Recorder said that he thought the justice of the case would be met by a sentence of three days' imprisonment. As a result the defendant was at once discharged.

At the Guildhall, November 17, William Carlyle was committed for trial upon a charge of stealing jewelry, etc., from his employer, Mr. S. Samuel, of Houndsditch.

Random Brieflets.

Shot Himself to Avoid Arrest.—A young man recently entered Messrs. Knight and Son's establishment in West-green Road, Tottenham, and offered in pledge two watches. The assistant, seeing that they answered the description of some stolen property, questioned the man, and told him that he should detain him. The man begged hard to be allowed to go, as he had only just come out of prison, but this the assistant refused. Then suddenly the captive pulled out a revolver and shot himself in the head. He is now in hospital, his condition being serious. We congratulate the assistant upon the choice of his customer.

More Window Smashing.—Another jeweler's window was smashed the other day, that of Messrs. Lowenstark and Sons, in the Strand. The perpetrator, who had the appearance of a tramp, gave no reason (or "logic") for his conduct.

Curious City Custom.—In 1831 a trust was established by Mr. Alderman Wilson to provide funds to supply a diamond ring to every Lord Mayor elected from Castle Baynard. After all these years the present Lord Mayor became eligible for it, and was accordingly presented with one.

Silver Cradle for the Mayor of Chorley.—The members of the Town Council of Chorley have recently presented their Mayor with a silver cradle, in the form of a silver boat, upon whose sides the borough arms and those of the Mayor are connected with festoons of roses, with turtle doves at helm and prow. The boat rests upon four supports rising from a silver table, upon an ebony stand.

Five Pound Gold Pieces.—It is said that in many of the colonies the five-pound pieces are still at a high premium. As much as seven pounds has been paid for them in Melbourne.

Watches for the Blind.—A new watch has recently been invented in Switzerland for the blind. A small peg is set in the middle of each figure. When the hour hand is moving towards a given hour the peg for that hour drops. The owner, when he wants to know the time, finds which peg is down, from which he is able to tell the time.

A Saw with Diamond Teeth.—A circular saw is now in the market for sawing up slabs of sandstone, granite, etc. One wonders why it has not been introduced long ago—seeing the marvellous cores that have been cut through the hardest rocks and brought up from the depths of the earth with the diamond drills—as they have been in use so long.

Horses in Spectacles.—We are informed that Messrs. Dollond recently made a pair of deep concave spectacles for a horse, with the object of making him lift his feet up, and so secure a race of high steppers. To many this may seem novel, but in point of fact it is nothing of the sort. We remember a Belgian boy at school, whose father was a breeder of funeral horses, who told us that for a long time colts, when broken in, were put into spectacles to make them lift their feet over imaginary high stones, until they did so without the spectacles. We, however, think there are great biological principles involved; that those little understood operations, known as natural selection, and other factors which pass sometimes under the heading of Darwinism, are responsible as much for our "breeds" of horses as of pigeons. Slow modifications are going on still, which in tertiary times have evolved the horse as we know him to-day from a small five-toed animal.

Something like Charity.—Messrs. Salanson and Co., High Street, Bristol, recently distributed over a thousand pairs of spectacles to poor people. This is not the first time they have performed this kind and generous act, and we hope it is appreciated in Bristol as it ought to be.

Another Relic of Nelson.—H.R.H. Princess Louise, while on her way to Kellie Castle, recently stopped at Anstruther for some time, and visited some of the principal places of interest, including a local watchmaker's, where they purchased a watch on account of the interesting story attached to it. A native of Cellardyke acted as steward on Lord Nelson's flagship. Something went wrong with the galley-clock, and Nelson gave him this watch to keep things right. It has remained in the family for some time, but came into Mr. Lumsden's possession latterly, and in answer to the inquiries of the party he produced it, and they eagerly bought it.

The Mahdi as a Collector.—It is said that the chief objects of interest to the Mahdi are clocks, and that his palace at Khartoum contains over 1,500 of one sort or another; it is also added that they are most of them out of order, and that the false prophet is ineffectually advertising for someone to enter his service as clockmaker.

"Why do men want watches?" asked Mr. Commissioner Kerr the other day in a watch-club case, "when there are clocks in every street." We don't know whether the Commissioner thought that men camped out all night under them so as to be able to see when it was time to rise in the morning.

We regret to hear that Mr. Spiller has severed his connection with the *Photographic News*. There was no paper existing which had a higher scientific authority behind it than Mr. John Spiller, whose assistance was always at the command of the readers of this journal. It is only another instance of what a man will do for the subject he loves. For while his *confrères* have struck out in lines which have resulted in Chairs and F.R.S.'s this worthy *savant* has been content with gratuitous work and to remain plain John Spiller.

We hear that a movement is on foot for the purchase for the nation of an absolutely unique gold cup, some six inches high, of exquisite workmanship, very possibly of English origin. It was, in any case, during several generations among the English Crown Jewels. It ceased, we believe, to appear in the inventory of these about the period of James I., and for a long time subsequently, its home was a convent near Bruges. Not long ago it was the property of Baron Pichon, of Paris, who valued it at £20,000. It is offered to the country by its present possessor, Mr. Wertheimer, of New Bond Street, W., for the sum of £8,000, which he himself paid for it; and he joins, it is said, with several distinguished amateurs in a subscription towards raising a considerable part, or it may be, even the whole of this sum.

The Photographic Cabinet Makers' Society held their annual dinner on the 7th ult. at the Mitre Hotel, Chancery Lane. Mr. E. Myers presided. There are about 135 members of this trade in London, of which 110 are members of the society. Selections of music by Mr. H. H. Heap, R.A.M., were given. In replying to the toast "The prosperity of the society," Mr. Lolley contrasted the existing state of things between employer and employés before 1824, and advocated federation with kindred societies. He subsequently received a presentation watch.

Treasures of the Orient.—The Shah has just been doing what we should call "taking stock," preparatory to another journey in the West. He is reported to be the happy possessor of £7,000,000 worth of gems, several articles being valued at £200,000 each; but if they were all as over-estimated as his jewels that we have handled, we fear we should strike out a few of the noughts. Doubtless he has some very fine—probably the finest turquoises in the world, but nearly all the diamonds are *lasque*, and roses cut.

Our *Diary and Desk-Book* for the year 1892 is a substantial book, well bound in strong boards and interleaved with blotting. It is brimful of information of special interest to the trade. Each new or renewing subscriber whose subscription is received before the end of the year is certain to receive a complimentary copy of this handsome book. After December 31st, subscribers run the risk of the edition being out of print, since we distribute it before the end of the year to ensure its full use from January the First.

Items of Interest.

A New Blow Pipe. Amongst the various instruments brought out from time to time by the Cambridge Scientific Instrument Company few are of more practical importance to jewelers than a blow pipe which we recently saw of their manufacture. By means of this instrument we succeeded in melting a small platinum bead. Its construction is very simple, consisting of a piece of india-rubber tube, one end of which is slipped over a gas-burner, and at the other is a nose piece carrying forked supports. Near the attachment of the tube to the nozzle it receives another tube, carrying a mouthpiece which is used by the mouth. Both oxydizing and reducing flames are well pronounced, and with it the most infusable substances can be handled with quite a pleasure. Although anyone can use it at first sight, we noticed we could regulate the flame very easily to whatever we required by simple pressure upon the tube. This must obviously be the greatest improvement yet introduced in this indispensable instrument. Under ordinary circumstances the maximum flame is employed. We have often stood behind good workmen, and have been struck with what a lot more there is in the manipulation of the blow pipe than they realise. Often at least ten times more gas is employed than is necessary, to say nothing of the injurious effects of the large outbursting flames upon the eye, otherwise working screened from the light.

* * *

Horological Ingenuity. Amongst other things constructed for the Chicago Exhibition is a clock which has been made by a man at Muhlenburg, Pennsylvania. Around the dial is a railway track, on which a miniature locomotive makes a round every five minutes. It requires a magnifying glass to see the delicate machinery. The oil cups at the journals are so small that nothing larger than a hair can be inserted. There is a headlight and bell, flag-holders on the pilot, whistle, and everything connected with a locomotive. It has a link-motion under the engine to reverse it. The weight of the locomotive is 1¼ lb., and it has been named "The Gem."

* * *

Waltham Watches. According to *The Sidney Morning Herald* of Thursday, October 8th, 1891, an interesting application was made to Mr. Justice Owen in Equity the day before, on behalf of the Waltham Watch Company, for an injunction to restrain Bela Singer, agent for the United States Watch Company, from exhibiting or offering for sale sample watches of the last named company, having stamped upon them the words "Waltham, Mass" (Massachusetts), these words being one of the trade marks of the Waltham Watch Company, and, as such, registered in this colony. The defence set up was, that the United States Watch Company also had its manufactory at Waltham, and this being the case the plaintiffs had no monopoly of the term "Waltham, Mass," which the defendant company merely used to indicate the locality where its watches were made; and, further, that as no attempt had been made to represent the watches as those of the plaintiff company, it could not be injured. On the other hand, a recent case was cited in which the Appellate Court in England had decided a case where a brewer at a place called "Stone" had for many years acquired a reputation for his "Stone ale," that no other person had a right, because he had a brewery in the town, to use the same description for his manufacture, and so lead the public to believe that it was buying the commodity which had a long-established reputation. The case relating to the right to the exclusive use of the term "Glenfield Starch" was also cited. His Honor said the case was too clear for argument, and granted the injunction.

Swiss Watchmakers and the New French Tariff. The *Daily Oracle* informs us that the export of watches, clocks, and their component parts from Switzerland exceeds £4,000,000 sterling per annum, and is increasing year by year. Germany is the best customer for these goods, taking more than a quarter of the whole export, and we are second in the list. Comparatively small quantities are sent both to the United States and to France, and it is not expected that the industry will seriously suffer either from the McKinley or the new French Tariff. The increased duties contemplated in the latter are, however, bitterly resented in Switzerland as a violation of the reciprocity which should govern the treatment of an industry in which populations on both sides of the frontier are equally interested. The value of the watches, etc., exported last year to France was only about £16,000 in excess of the value of those imported from that country, and in many watches part of the machinery is of Swiss and part of French manufacture. It is therefore considered very unjust to the Swiss industry that the French duties should be so much larger than those levied in Switzerland, and the Federal Council has been approached with the view of getting more equitable treatment from France.

* * *

Clocks and Watches wanted in Japan. It has been ascertained that during the past thirty years a little over 2,000,000 watches and clocks have been received into Japan, allowance being made for a few re-exported. Comparing the total with the number of houses in the empire in 1889, it seems that only 16 per cent. of the dwellings and 5 per cent. of the inhabitants possess timekeepers of any description. It is evident that the Japanese are very badly off for telling the time, and cheap watches ought to find a ready sale among them.

* * *

A New Anode for Colorers. An American claims to have discovered a new anode, by which a fine color can be obtained, and that will outwear that produced from an anode of pure gold, being harder and tougher, and can be obtained about 15 per cent. cheaper.

* * *

Repeater Conversions. A patent has recently been taken out by a New Jersey man, which claims to be able to convert any ordinary watch into a repeater. The chain is wound by an opposite motion of the stem, and is automatically released when the winding is complete. The arrangement is such that the repeating mechanism can be removed bodily when cleaning is necessary.

*

Do you Know Rubies from Garnets?—Miss Dixon, niece of Dr. Dixon, of the Academy of Natural Sciences, recently conceived a desire to become the possessor of two fine pigeon's blood rubies to go beside a fine white diamond upon her delicate hand, and accordingly sent to Paris for them, for which she paid about 2,000 dols. Wanting to show them off to a native lapidary she exhibited her treasures, when lo! the Philadelphian son of the lap declared they were only garnets! Litigation was commenced with the Parisian house, who immediately returned the lady the 2,000 dols., saying they had been taken in themselves. If a house of this calibre don't know rubies from garnets it ought to be taught a lesson.

We regret that owing to the large quantity of matter pressing upon us this number, we are obliged to let several things stand over till our next.

Our Unwrought Materials.

Gold in a New Place.

It is well known that the natives of the Gold Coast have long discovered the fact that by patient perseverance gold can be panned from the shallow sands of their coast, but hitherto we believe nothing has ever been done on any important scale in washing ordinary seaside sand, whatever may be the nature of the rocks and cliffs that are being continually destroyed, or the reefs undergoing disintegration by the great rivers which empty themselves at any particular spot of the globe. As yet there is no *a priori* reason why attention should not have been directed to these deposits. We know that all alluvial deposits have originated by the denudation of gold-bearing rocks, and that every important river carries into the sea millions of tons of detritus annually. Hence the wonder is how these shore sands should have been neglected so long. But recently a man stepped into a Californian jeweler's and asked him to test something. It turned out to be gold, whereupon by inquiring, the wily jeweler ascertained that the man had obtained it from sand taken from the sea shore. He accordingly made certain proposals, which ended in the two repairing to the place, and bringing back large quantities of the sand and smelting it. Large concessions were obtained, and a company formed by a few friends, who believe they have got a veritable bonanza.

A Mountain of Silver.

It is reported that rich discoveries of silver-pyrites—in fact, in one instance a whole mountain of it—have been made in the northern part of Pretoria. The farms in the locality are being readily bought up with the object of mining for silver. This story must be taken for what it is worth.

Paper Driving Belts.

It might be interesting to many of our manufacturing readers to hear that paper driving belts are reported to be giving great satisfaction, and that with widths exceeding five inches, they have been run side by side with leather belts of the same size, giving far more satisfactory results.

An Allotropic Form of Silver.

According to *The Globe* the allotropic silver of Mr. Carrelly, the American chemist, has the color of gold, and plates of it might be mistaken for gold; but it is a very unstable body. Heating it, or merely striking it with a hammer, brings its lustre back to that of ordinary silver. Mr. Carrelly has also obtained a purple variety which gives a yellow tinge to common silver. The "allotropic silver" is not really pure, however; it contains about three per cent. of iron and citric acid. In fact, it is a kind of alloy.

Beating the Record Again.

There is even possibility now that the optimistic, though at the same time highly improbable prophecy concerning the gold output of the Rand, will not be far short of right, seeing the output for October has reached 72,793 ozs. giving a total for the ten months of 575,508 ozs. It also begins to appear that "Yellow-water-range" would have been a more appropriate name than "White-water," seeing how freely the yellow gold streams down from this elevated region.

"Mexican Onyx."

The production of this beautiful material is on the increase; new localities are being found, and new plants for polishing and cutting it laid down.

APPLICATIONS FOR PATENTS.

(*Expressly compiled and contributed for this Journal by* Messrs. W. P. Thompson and Co., 6, Bank Street, Manchester; 6, Lord Street, Liverpool, and 323 High Holborn, London, W.C.)

14,259.—"Pendulum," S. Riefler, Sheffield, 24 Aug., 1891.

14,360.—"Improvements in brooches and safety pins," O. Wentzel, London, 25 Aug., 1891.

14,385.—"Precious stones," A. Boult, London (A. Kuhne Germany), 25 Aug., 1891.

14,463.—"Improvements in or connected with escapements and other gearing parts of watches, clocks, and clockwork mechanisms," T. Masters, Liverpool, 27 Aug., 1891.

14,581.—"Improved means for fastening brooches and the like," G. W. Langley, London, 28 Aug., 1891.

14,672.—"Thief-proof swivel bow for watch-cases," W. Matthews and W. G. Bennett, Coventry, 31 Aug., 1891.

14,690.—"Safety scarf-pin holder," A. Hahn, London, 31 Aug.,

14,734.—"Dress studs," W. White, Birmingham, 1 Sept., 1891.

14,823.—"Martin-Pethybridge gold extraction apparatus," W. Martin and W. Pethybridge, London, 2 Sept., 1891.

14,872.—"A new or improved cover for protecting watches from dust," W. C. Lowden, Newcastle-on-Tyne, 3 Sept.,

14,954.—"Watch protector," A. Pinfold, Cleckheaton, 4 Sept.,

14,967.—"Process and apparatus for extracting aluminum," G. Steinle, London, 4 Sept., 1891.

14,989.—"Aneroid barometers," T. Short and W. Mason London, 4 Sept., 1891.

15,008.—"Brooches," W. Pearce, Birmingham, 5 Sept, 1891.

15,366.—"Improvements in links or studs for fastening the sleeves of shirts," D. Blaikloy, London, 10 Sept., 1891.

15,973.—"Photographic cameras," Daniel James Tapley, 52, Chancery Lane, London.

15,978.—"Improvements in means for mounting and supporting theodolites, cameras, and other instruments and appliances requiring exact adjustment," Edward Stanhope Padmore, 1, St. James' Square, Manchester.

15,995.—"Fine adjustment of microscope," Charles Thomas Partridge, 1, New Charles Street, City Road, London.

16,016.—"Improvements in hand or other cameras," William Beyer, 5, Kelly Street, Kentish Town, London.

16,051.—"Watches," G. Newton, London, 22 Sept., 1891.

16,052.—"Scarf rings," F. Walton, Birmingham, 22 Sept.

16,094.—"A new or improved process for producing photographic pictures, having colors resembling those of the objects from which they are obtained," Victor Mathieu, 35, Southampton Buildings, London.

16,174.—"Illuminating the dials of watches," B. Haas, jun., and G. Trouve, London, 22 Sept., 1891.

16,209.—"Brooches," H. Bowen, King's Heath, 24 Sept., 1891.

16,222.—"Opera glasses," C. Boulter, London, 24 Sept., 1891.

16,223.—"Apparatus for holding opera glasses and similar optical instruments up to the eyes," Cornelius Alfred Boulter, 7½, St. John's Lane, Clerkenwell, London.

16,291.—"Sleeve links or studs," E. Cernikousky, Newcastle-on-Tyne, 25 Sept., 1891.

16,324.—"Improvements in and pertaining to spectacles," William Howell Phillips and Howell Benson Phillips, 37, Chancery Lane, London.

16,369.—"Improvements in and pertaining to cameras and sensitive plates for photographic purposes," Robert Fowler, 6, Lord Street, Liverpool.

16,423.—"Cravat fastener," 18, Buckingham Street, Strand, London, 28 Sept., 1891.

16,453.—"Improvements in apparatus for indicating the distances travelled by ships," Charles Wright and James Stewart, 46, Lincoln's Inn Fields, London.

16,548.—"Improvements in disc winders for watches," G. Newton and D. C. A. Thatcher, London, 29 Sept., 1891.

16,559.—"A brooch or lace pin safety attachment," W. Wattie, London, 29 Sept., 1891.

16,629.—"Improvements in means or devices for producing optical illusions," Gustav von Prillurtz-Palm, Lawrence Abraham Somers, and Jacob Somers, 226, High Holborn. London.

16,682.—"Improvements in cases for the displaying or keeping of jewelry," S. Harris and B. C. Taylor, Birmingham, 1 Oct. 1891.

16,698.—"Improvements in sensitive materials for photographic purposes," William Hay Caldwell, 28, Southampton Buildings, London.

16,708.—"Improvements in photographic cameras," Adolf Hesekiel, 18, Buckingham Street, Strand, London.

16,726.—"Improvements in the fastening of ladies' brooches," G. T. Tugwell, Brighton, 2 Oct., 1891.

16,752.—"An improved electrical and mechanical alarm clock," D. J. Mullarkey, Bradford, Yorks., 2 Oct., 1891.

16.756.—"An improved watch protector," J. A. Andrews, Beaminster, Dorsetshire.

16,759.—"Connecting the metallic handles of metallic teapots, etc.," Elkington and Go., Ltd., and Henry Thomas Fellows, 7, Staple Inn, London, 2 Oct., 1891.

16,763.—"Improvements in double eye-glasses," J. Browning, London, 2 Oct., 1891.

16,780.—"Improvements in photographic lenses," Thomas Rudolph Dallmeyer, 24, Southampton Buildings, London.

16,831.—"A new or improved range finder or telemeter," John Sheldon, 128, Colmore Row, Birmingham.

16,856.—"Improvements in brooches, buttons, and analogous articles," T. P. Lomas, and T. W. Lomas, London, 3 Oct., 1891.

16,886.—"Improved safety-guard for watches and the like," J. A. Wilson, Dundee, 5 Oct., 1891.

16,858.—"Improvements connected with photographic cameras," James Frazer, 166, Fleet Street, London.

16,936.—"A double action instantaneous shutter for detective hand cameras," Thomas Ernest Smith, Sandringham House, Osborne Road, Southsea, 15 Oct.

16,961.—"An improvement in solitaires, shirt-studs, collar-studs, buttons, and other like dress fastenings," J. Cooper, Birmingham, 6 Oct., 1891.

17,001.—"Improved stop-watches," N. Jensen, 4, South Street, Finsbury, London, 6 Oct., 1891. [Date applied for under Patents Act, 1883, Sec. 103, 16th April, 1891, being date of application in United States.]

17,043.—"Improvements in clocks," J. F. Abraham, Bradford, 7 Oct., 1891.

17,098.—"Printing lantern or other transparencies by contact, called the 'Dore adjustable lantern slide printing frame,'" James Dore, 27, High Street, Sandown, Isle of Wight.

17,122.—"Improvements in the methods of suspending mariners' compasses and other instruments," Alexander Hughes, Billiter House, Billiter Street, London.

17,215.—"Improvements in boxes or cases for containing jewelry and other articles during conveyance by post or other use, and in means or apparatus employed therein," William Heatley, 55, Chancery Lane, London.

17,255.—"Improvements in machines for cutting glass," Arthur William Hirst, St. Michael's Road, West Croydon, in the County of Surrey.

17,264.—"Self-winding electric clock," J. Rich, 106, Victoria Chambers, Chancery Lane, London, 10 Oct., 1891.

17,407.—"An improvement in clocks," T. Whitehead and J. Davidson, Wick, N. B., 13 Oct., 1891.

17 408.—"A new or improved holder or stand for displaying multiple photographs and the like," William Tylar, 12, Cherry Street, Birmingham.

17,430.—"Electric batteries," Daniel Martin Lamb, 24, Southampton Buildings, London.

17,506.—"Improvements in turning lathes," James McHardy and Walter George de Forges Garland, Fairfax House, Chiswick.

17,516.—"Improvements in shutters for photographic cameras," John Edward Thornton and Edgar Pickard, 6, Bank Street, Manchester.

17,719. "An improved electric or galvanic battery and its adaptation to brushes and other articles," Arthur Hervey Byng, 55, Chancery Lane, London.

17,971.—"Improvements in electric clock-winders," J. W. Du Laney and C. F. Du Laney, London, 20 Oct., 1891.

18,148.—"Improvements in fasteners for cuffs," J. E. Wordsworth, of London, dated 22 Oct., 1891.

18,215.—"Improvements in alarm clocks," J. D. Newton, Hendon, Middlesex, 23 Oct. 1891. (Communicated by V. Meyenburg, Germany.)

18,242.—"Improvements in watch chains and the like, and in the manufacture of same," W. T. Pain, London. Complete specification dated 23 Oct., 1891.

18,343.—"An improved cuff-holder," A. G. Groves, of Bristol, dated 24 Oct., 1891.

18,404.—"Improvements in alarm clocks," J. D. Newton, of Hendon, dated 26 Oct., 1891.

18,427.—"Improvements in fastenings or protectors for the security of watches, purses, and such like articles of value," Henry Foot, of London, dated 27 Oct., 1891.

18,847.—"An improved alarum clock," O. Kreuzer, London, dated 31 Oct., 1891.

18,856.—"An adjustable purse-guard for protecting the purse whilst in the hand," H. E. Bass, of London, dated 2 Nov., 1891.

18,922.—"Improvements in collar scarf clips," W. Pearce, of Birmingham, dated 3 Nov., 1891.

18,935.—"An improved pencil-case and sharpener," W. F. Wright, of London, dated 3 Nov., 1891.

19,008.—"Combination collar-stud and tie-band hook," G. B. Mee and A. G. Meeze, of London, dated 4 Nov., 1891.

19,400.—"Improvements in cravat clasps or fasteners," T. Gauss, of Sheffield, dated 10 Nov., 1891.

19,447.—"Improvements in sleeve-links," T. Partington, of London, dated 10 Nov., 1891.

19,482.—"A new mechanical movement more especially applicable to clocks," H. Martin and P. R. J. Willis, of London, dated 10 Nov., 1891.

19,760.—"Improvements in clips or holders for wrist-cuffs and the like," W. Tagart, of London, dated 14 Nov., 1891.

19,790.—"A metal hook for holding watches, lockets, seals, and other suitable articles, combined with a spring-clip to hold a price or description ticket of various sizes," B. C. Taylor, of Birmingham, dated 14 Nov., 1891.

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The new catalogue of Messrs. Vaughton is ready for Christmas, and very replete.

Messrs. Robbins and Appleton wish us to point out that the reference recently made in our pages to reductions in the price of American watches relate only to eighteen-size expensive watches, a line not sold in this country.

The trade will be well represented in the new School Board for London, which includes, amongst others, our late Lord Mayor and Mr. J. J. Stockall, to whom we offer our congratulations.

All subscribers for the year 1892, whose subscriptions are in hand before December 31st next will be entitled to a complimentary copy of our *Diary and Desk-Book* for 1892. Subscribers delaying beyond the end of this year run the risk of disappointment, as the whole edition will be put in circulation with promptitude in order to be of service from the first day of the New Year.

The Watchmaker, Jeweler and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

Entered at Stationers' Hall.] [*Registered for Transmission Abroad.*

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The Year Past.

IT would be hardly justifiable in the face of the daily bulletins of the state of trade that we have received all through the year that has just past us, to speak of it in extravagantly glowing terms, or to attempt to mark it out as one of unmitigated prosperity. But while we cannot do this, there is still something to be said in this connection—and that is, that there is nothing very bad to chronicle. Eight months of this trying year passed in a chronic state of grumbling. But when we are in a better position to gauge the exact state of Trade as a whole, we do not think it will fall far below—and certainly in many quarters it will greatly exceed—former years. It must not be forgotten that 1891 was severely handicapped with the effects of the most trying winter in the memory of man, which lasted quite past Easter, so that the holiday trade was materially assailed. Still, for all that, the report from various parts of the country was better than could have been expected, whilst in London many reported they were very busy. Had it been followed by a cheerful spring, we might perhaps have fully pulled up, or even passed, former averages. But with Whitsun we had weather more like bleak February; and from thence till the middle of December we had scarcely anything but downpours, floods, and gales, such as have never had a parallel. Despite all this, however, between the storms, trade seemed to rally, and quite a number of months were satisfactory. The visit of the German Emperor did a great deal to stimulate trade, and although at times some people think such large sums ought not to be spent in entertaining Foreign Monarchs, it must be admitted that it is not the quantity of money hoarded up by individuals that constitute the business prosperity of a nation, but the circulation of it.

TURNING TO BIRMINGHAM,

its affairs are now so interwoven with those of London that the state of business in the latter is generally reflected in the former—with perhaps this difference: that there is always something being done in other parts of the country which is also felt in Birmingham. Indeed, the good organisation that is yearly developing in Birmingham, and the way they are laying themselves out to be the jewelry-producing centre, must give to them a position of increasing importance. The past year has seen many noble efforts in this direction; and the Association, with all things connected with it, are to be highly congratulated upon their year's work, as through their efforts the excellence of Birmingham jewelry was proclaimed by one of the world's mouthpieces, and to-day thousands of people, many thousands of miles apart, have a good impression of Birmingham jewelry to whom before it was practically unknown.

IT IS SHEFFIELD,

perhaps, that has the most of which to complain in 1891, as one cannot deny that an immense amount of trade has been lost through the imposition of the prohibitive tariff associated with the name of McKinley. We may, however, remind our friends that, after all, they are no worse off than their cousins, whose fortunes this impolitic imposition was going to make in such a hurry; but, on the contrary, we find in many parts that in reviewing the year that is past they characterise it as exceptionally bad.

IN THE SILVER AND ELECTRO-PLATE TRADES

figures are relatively somewhat altered, there being much more business done in silver than in former years. How far this is the result of the abolition of the tax, or the in-setting of the fashion for silver, is a question upon which there is a diversity of opinion. We hope it is the former, but still we cannot shut our eyes to the fact that other countries where fashions run the most nearly parallel with ours the same increase in solid silver has been experienced.

THE WATCHMAKING INDUSTRY,

in addition to being busier all round, has certainly enjoyed a far better prospective year than any we can call to mind in its whole history. The Merchandise Marks Act has been cleared of the haze and maze it presented to many and strengthened by further legislative measures. The Trade have recognised the right course to pursue, and all is now plain sailing, and the good effects of the Act are now pouring in upon the Trade. It has been a searching ordeal, but the English watch industry has come out victorious. It has spurred men on to do what they could have done years ago had they have wished; and we have had the stigma that all complicated watches are made in Switzerland once and for ever removed. And we may even congratulate ourselves this year upon important improvements in chronograph work. It is this class of goods that we should like to see sent to the World's Fair to maintain the British supremacy. Each of the centres of the industry have been awakening; new buildings have been added, new capital invested, and new companies started; so that in looking back upon 1891 we have not only much with which objectively to be pleased, but subjectively we have much more.

GEM JEWELRY

on the whole has received an impetus from the in-setting of the fashion for colored stones; but, although we have had numerous reports of discoveries, not one of them have turned out of sufficient importance to influence the market. The announcement of the failure of the Ceylon Gemming Company, who sought consolation in suffering a similar state to other enterprises of the same kind, was a great disappointment to many. Let us hope that a better fate awaits the Montana Ruby Deposits. Although this year has seen the most important diamond discoveries ever made, they are not sufficiently developed to influence the market in any way, and we are of the opinion that even if the most extreme conditions ensued, and that De Beers did not get hold of the Premier Mine—a condition which appears next to impossible—even then it could only last for a very limited time, as we have seen that diamond *mining*, in the true sense of the word, cannot be carried on except by very large combinations. Under these conditions one is not surprised to find that prices have been fully maintained throughout the year, and fine stuff possibly even a little advanced.

THE METALS

have had various experiences. Silver has been a respectable steady old dame, not flying hither and thither as it did in 1889. Indeed, we pointed out in the middle of the year that there was no likelihood of more than a fractional alteration for six months — a prediction very nearly fulfilled.

Platinum, on the other hand, has been brought from its pinnacle; nor do we think it at all probable that it will ever reach such a ridiculously high figure again.

ONE OR TWO LESSONS

of 1891 ought to have been received with profit; notably amongst others the necessity of taking receipts for every business transanction, even with aristocracy; and another not to buy anything in an office in the City of London, but in a shop, which, ridiculous though it may appear, is still necessary according to law.

THE BLACK HAND

has perhaps not been so unkind as it sometimes is, and we have not had to chronicle the death of a dozen members of the trade all told. Nevertheless, the wretched influenza has played sad havoc amongst us, and has claimed by far the greatest share of victims, suspending the business operations of some factories for months.

OUR CHARITIES

will have cause to remember 1891, and while we, as a body, will have cause to remember with pleasure and pride the good done to them by the Right Honorable the Lord Mayor of London, we can also assure him that charity, like mercy,

> "Is twice bless'd—
> It blesseth him that gives, and him that takes."

The Markets.

SILVER.

Has not varied much during the month, from 44½d. at the commencement, after various fluctuations, it declined to about 44d.

COPPER.

Opened firm at the beginning of the month at £47 per ton, but gave way to £44 15s.; it has, however, since got dearer, and now stands at £45 12s. for G. M. B. and is likely to go higher.

TIN.

There has not been much movement in tin, the price varying from £92 per ton to £90 7s. 6d.

SPELTER.

Has been dull and quiet at about £22 7s. 6d. per ton.

LEAD.

Is still very much depressed in price, and all the month has been going lower, and is now about £11 5s.

QUICKSILVER.

Remains at £8 for Rothschilds.

MOTHER-O'-PEARL.

The December sales of this valuable commodity did not show great alteration. As much as 10s. advance was noted upon Manilla. West Australian chicken, £8 10s. to £8 17s. 6d.; medium, £8 7s. 6d. to £8 12s. 6d.; grubby, 80s. to 105s.; some dead stuff only realised 30s. Macassar, £10 10s. to £11 12s. 6d.; chicken, £8 12s. 6d.; medium, £8 12s. 6d. to £9. Many of the Australian shells "hung," and rates were up to 10s. less than last sales.

Prescot Watchmakers' Association.

The first dinner of the above association was recently held at the Crown Hotel, over a hundred being present. The chair was occupied by Mr. J. J. Brown, whilst Mr. Edwin Rimmer acted as vice. In proposing "Success to the Prescot Watchmakers' Association," the latter asserted the necessity of unity, detailing the various benefits to be obtained by such action. The reports of the society are now much more favorable than when we last referred to them; their total strength now being 89 members, and, contrasting the present funds with those at the commencement of the year, the secretary was also able to report an increase, as they now show a balance of about £200. After business matters were disposed of, several gentlemen joined to produce a very pleasant musical evening. On the following Monday evening no fewer than fourteen new members were enrolled.

Determinative Gemmology.

THE PLEOCHROISM OF GEMS.

By the Editor.

Of all the distinguishing and charming characteristics of gems, there is one of superlative importance which immediately separates its possessor from other gems, viz., *pleochroism*. The fiery splendor and bursting forth of prismatic hues in the diamond, its high refractive index and concomitant phenomena may all be approached or even excelled in natural and artificial productions; but this property of pleochroism is the invaluable possession of a select few stones, and by which it is shared in various degrees. As we gaze admiringly into an ideal ruby, we are struck with the inexpressible something which renders its hues so soft, yet so brilliant, so powerful, yet so quiet; and for once in our lives, perhaps, we realise that after all there is some justification for the extravagant price the jewel can command. If we place beside it a spinel of approximately the same hue, and which, it may be, has been bought and sold several times by large firms as a fine ruby, what a cold, hard, monotonous blaze it appears in the comparison! Obviously there is some quality in the ruby not possessed by the spinel; and this quality is the inimitable *pleochroism*.

We may even go a step further, and place beside our ruby another cut from a piece of the very same stone, which before cutting appeared equal to it in every respect, and from which it would not have been cut but to get rid of a flaw; and contrary to what we might have expected, this approaches the ideal hardly any more closely than the spinel! The whole of the table "draws" a monotonous violet. Round the facettings towards the girdle it certainly beams forth a little of the royal pigeon's blood hue, but on the whole it is very little better than the spinel; in fact, few could distinguish which is the ruby of the two—so completely has the ruby been murdered in cutting! Indeed, the more one compares the spinel and the inferior ruby, apart from the ideal ruby, the more does it appear difficult to distinguish between them.

What this difference is we shall now proceed to show by the help of a little instrument called the Dichroscope; but as putting a man behind a telescope or microscope does not make him either an astronomer or a petrologist, so neither does placing him behind a dichroscope make him a gemmologist. Still, the most superficial knowledge of the instrument and its use will enable him to readily distinguish between the two foregoing gems.

The Dichroscope.

This valuable little instrument was originally invented by Haidinger, but in the form in which it left his hands, or even with the improvements upon it made by English opticians, it is almost useless. Nor can it be said that even the best account of it that has been written is anything more than very incorrect and misleading. It is owing to this that many, after trying it, have given it up with disgust. Almost the first time I used the instrument I noticed the defects of its construction, and had them remedied; but from my knowledge of optics I saw that while it was a very useful instrument—far more useful than was generally considered—physical impossibilities were claimed for it. Since then I have made various modifications and additions to it, so that in its most elaborate form it is an invaluable instrument for gemmological research. The most convenient and useful form of the instrument is shown in Fig. 1. A is a brass tube fitting into another tube, B, in which it moves freely in any direction. Inside it carries a rhombohedron of Iceland spar, with the ends cut perpendicularly to the prism. This is covered at the further extremity with a protective glass, and at the other with a lens. The end of the tube A has a perforated cap, which serves as an eyepiece. The tube B is closed by a cap at the further end, perforated by a small square aperture about ·12 inch square. C is another tube, which fits freely over B, so that it can be moved up and down, or round it, and from one side of this springs an arm which carries a stage. The latter is graduated into 360 degrees. Through the centre of the stage passes an arm, E, moveable longitudinally or circularly, terminated at the outer end by a milled head, F, and at the inner end by a small metallic cup, G, in which is placed a small piece of beeswax, rendered more tenacious by the admixture of a little Venice turpentine. Between the cup and the index dial the arm carries a watch hour-hand, which grips it sufficiently tight to follow it round when so turned. This hour-hand is nevertheless moveable at will, either when various sized stones are being tested, or when it is necessary to bring the hand to zero, in case the stone is in any given position, for which it is desirable to make measurements. There is another graduated circle round B, and a mark in the eye-piece A, by which the angular movement of the prism can be read if necessary. The drawing is full size, and in this form the instrument can be put into a case and carried in the pocket; but for ordinary use it is more convenient to fix it by the tube B into a stand; both hands are then free.

FIG. 2.

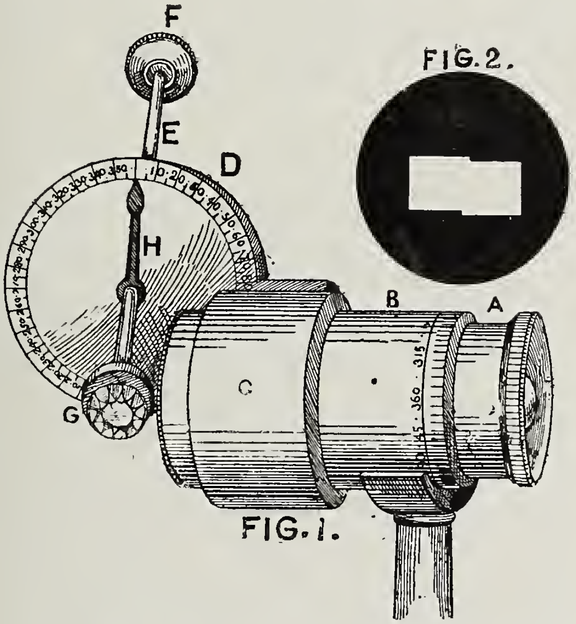

FIG. 1.

We will now proceed with the use of the instrument, turning the stage towards the light, either natural or artificial, the former being of course far the best, next the electric light from a ground glass lamp, or lastly from any other kind of lamp with an "opal" globe. Naked lights answer, but should never be employed if their use can be avoided. First we notice that the index-mark upon the eye-piece A is opposite zero on the scale on B. Upon placing the eye to the eye-piece, instead of seeing an image of the square aperture at the further end, we see two such images, standing horizontally, slightly overlapping each other, as shown in Fig. 2; the cause of the two images we will not stop now to inquire, but reserve our explanation for a future occasion.

(*To be continued.*)

Mr. Sharland, of Thavies Inn, W.C., is supplying Mr. Edward Whymper's new book on the aneroid barometer. Optical readers who have never paid this establishment a visit have probably much to regret.

Items of Interest.

Coventry School of Art. THE annual meeting and distribution of prizes in connection with the Coventry School of Art took place on December 9th, under the presidency of the Mayor. Amongst those present were numerous familiar names in the Trade. We have once more the pleasure of congratulating Coventry on the taking of a Silver Medal. We venture to think that even the Coventry people themselves are not aware of how much the fine engraving and designing that is done in the Trade owes its origin to Coventry. To our knowledge several of the finest draughtsmen in our Trade now were educated there while working at the textile industry; and we are highly gratified to hear by the report that they have received the much needed help from the Corporation, which will not only enable them to carry out their work more extensively, but enable them also to offer special advantages to students.

* * *

A Speaking Watch. ONE of Edison's latest inventions will be exhibited at the next Electric Exhibition at St. Petersburg, and will consist of a speaking watch. The dial is made to represent a human face, and the interior contains a phonograph. The mouth opens and tells the hours, the half hours, and the quarters in a strikingly human voice. It can also be set at a particular hour in the morning to remark several times running, "It is time to get up!" "It is time to get up!"

* * *

Hydraulics to the Front. A SYSTEM of hydraulically-controlled clocks has recently been installed in the Berlin University by the Urania-Uhren and Saülen Commanditgesellschaft (Breslauer and Dr. Von Orth). The installation consists of an ordinary clock, seven secondary clocks, and four ringing arrangements, all connected by a system of water conduits to a central apparatus erected in the vestibule of the building. At the end of each complete hour the principal clock sends an electrical current through the electromagnet of the central apparatus, thereby disengaging an arrangement of wheels and opening a watercock. The water then flows through the water-jet pumps, and absorbs the air in a network of tubes to which all the secondary clocks and ringing arrangements are connected. Each of the secondary clocks is provided with a brass casing, which is closed by means of a leather membrane. As soon as the air in the casing becomes rarefied, the membrane lifts a bar, by means of which the hour finger is made to act at the exact moment of completing the hour, and the clock is wound up to the extent it has run down during the hour just completed. The ringing arrangements are also fitted with a similar casing and membrane, which, during the rarefaction of the air, lifts the hammer and causes the bell to ring three times. When the necessary amount of rarefaction of the air has been attained, and the work of the apparatus is completed, the water-cock in the central apparatus is automatically closed. Several installations of clocks on this system have already been made, notably at the Berlin Exchange and the Potsdam railway station.

* * *

Cycle Manufacturing. THE fourth ordinary general meeting of the Humber Company, recently held at Cannon Street Hotel, points to a very satisfactory state of affairs in the cycle world. Last year their profits were £13,700; while this year they were £25,317, which, after writing off all expenses, left a net profit of £17,305. The chairman assured the shareholders there was no likelihood of Mr. Humber leaving the company, and that the rumor of his leaving and forming another company, and building a large factory, was perfectly unfounded. He further pointed out that the McKinley tariff had not caused a decrease in the American trade; as a matter of fact,, it had greatly improved during the year. On the other hand, we hear that Mr. Warman, of Messrs. Warman and Hazelwood, Coventry, has been to Philadelphia with a view of erecting a factory over there. They claim to turn out 25,000 machines annually, employing between 600 and 900 hands.

* * *

Electric Exhibition. THE forthcoming Electric Exhibition at the Crystal Palace will be probably the grandest display that has ever been made. Every branch of electricity, and its application, will not only be represented, but will be represented thoroughly. The committee consists of the lions of the science, and treats of numerous examples of the practical goodness of the goddess *Electron* that are in store for us all.

* * *

The Demagnetising of Watches. ATTENTION has from time to time been directed to the danger of watches becoming magnetised through being accidentally or inconsiderately brought into contact with dynamic machines. During the last Edinburgh Exhibition a number of valuable watches were affected in this way and rendered useless as timekeepers, and with the more general adoption of electricity for various purposes the risk alluded to is becoming more common. Mr. J. S. Matheson, Leith, who has given some consideration to the matter, has patented a process which he claims is effective for the purpose in view, and that watches treated in accordance with it have been thoroughly demagnetised and made to keep time as well as before being affected.

THE NUMBER OF GEMS.—It has frequently been pointed out that the ordinary jewelers' gem-vocabulary consists of diamond, ruby, emerald, sapphire, garnet, opal, pearl. In our Diary for 1892 we give a list of upwards of 200 whose claims can be fully established, the majority of which have their own hue suite. With such an inexhaustible color-box as this, we may justly ask, Ought our designs to suffer for want of material?

WHEN SEEN, TO BE MADE A NOTE OF.—The authorities at Scotland Yard have, it is said, been warned from New York that a party of five exceedingly clever American swindlers are now on their way to England. Two of the five are women, and some of the West-end jewelers have already been apprised that ingenious attempts may be made to relieve them of their property.

UNITY IS STRENGTH.—In addition to the various local societies in almost every important centre in the country, pawnbrokers have for a long time realized the necessity of a National Pawnbrokers' Association, and operations are on foot for the formation of such an association. We wish them every success.

DURING the last month there have been quite a number of important sales of old silver. The most noteworthy of which was probably that of the late Lord Truro, which, by the way, was not sent to Christies, but to Messrs. Debenham, Storr, and Sons. The total of the sale was somewhere between £5,000 and £6,000. It included, however, other articles of virtu, the aggregate weight of silver being about 3,000 ounces. Prices averaged fairly high, frequently 35s. and 42s. per ounce. There have also been several similar sales in the North, in Scotland and Ireland, and although as much as 44s. an ounce was realised on one occasion for four old octagonal salt-cellars, prices in the North were usually single-figured, sometimes as low as 5s. Silver war medals, however, realised good prices, amongst which were the following: Ghuznee, Cabul, 1842, £18 18s.; Kilat i Ghilzie, 1842, £19; Ghuznee, 1839, £8 15s.; Delhi, 1849, £8 10s.

Birmingham Notes.

(By our own Correspondent.)*

IN reviewing the trade of the month just past, the most noticeable feature we find has been its uncertainty—this day brisk and full of life, the next dull almost to stagnancy. Nor has this unsatisfactory state been of partial operation only. From numerous inquiries throughout all sections of our Birmingham trade, both manufacturers and factors, the same answer is obtained, showing that the causes of this, whatever they are, are of general extent. In spite of this, however, the total business of the month has been well up to the average. As I prophesied last month, there has been a good Christmas trade; the demand for approbation parcels, especially during the ten or twelve days preceding Christmas, while not being anything abnormal for the time of year, has been sufficient to test to the fullest extent the capacities of the stocks held by the trade, and the working powers of the various employees who manage this section of our businesses. It is too soon to speak as to the actual results of this appro. business, as the majority of the goods are held over to the new year; but the percentage of keeps from such lots as have come back show a very good return. The call for appro. this year seems to be the result of a genuine demand, and to be somewhat less than usual of a speculative nature.

IN the jobbing departments, too, there has been a continuous rush during the month. Both the makers proper and those out-workers who do a jobbing trade only have been kept hard at work. Why *will* people leave their repairs to the very last moment, when they stand a chance of having the work badly done, or of its being too late for their purpose? A little forethought on the part of the public would save themselves the risk of disappointment, and at the same time save the trade a lot of worry.

THE usual late hours of Christmas time have been observed this year; in more than one instance the "wee sma' hours" being well in sight before the last parcel was despatched.

IN the face of all this it seems hard to account for the vast amount of grumbling I have heard. This, like the other matters noted, seems to have been "quite up to the average." I think, however, that the key to this is found in my first paragraph, where I speak of the "uncertainty" of the trade of the month. Besides, there seems to be a sort of contagion in grumbling, and where the many are speaking of bad times the individuals are afraid of owning to being busy even when doing well. This, I believe, is the present case. All have been doing well, but all are disinclined to say so; hence the grumbles pass current. But to us, reading between the lines, they do not really indicate the state of trade.

I AM loth to leave the Old Year without a word or two of parting. Taken as a whole it has been a satisfactory and successful year. There have not been any of those times of excessive pressure, nor, on the other hand, have there been any undue depressions. Month after month has passed quietly on, each one bearing its fair share of business for the time of the year. And in totalling up the final results the same thing is observed. It has been a good all-round year, not brilliant, but firm in tone, and with a goodly turnover. Prices, too, although they have not stiffened, yet have not declined, and the profits of the year's trading are likely to show a satisfactory balance. We leave the year 1891 with regret, trusting that its immediate successor may prove no worse. It may perhaps be well to specify (although hardly necessary) that there may be individual exceptions to the above remarks. I know, however, from actual experience that they correctly represent the bulk of the trade here.

NOW as to the prospects of the coming year. I am unable to form a definite opinion. After several conversations with people here, who are most likely to discern the shadows cast by coming events, I find the opinions held are so diverse that there is but little material on which to form one's judgment. The unsettled aspect of the political horizon, with the certainty of a General Election during the year, renders it more than usually difficult to see far ahead. So far as one can tell, however, the year does not open quite so favorably as 1891. There is a less reliant feeling about, and the sense of insecurity seems over all things. Nevertheless, we are safe for January. There will be the usual making up of stocks on the part of the factors—indeed, some of them have already begun buying—and the usual competition among manufacturers to secure the opportunities offered for selling parcels of goods.

THE proposed issue of £1 notes, to ease the gold currency, does not interest our trades so much as did the former proposal to issue the said notes on a silver basis. Had this been carried out it would have greatly influenced the price of silver, a matter which would have seriously affected our local silversmiths; but with the permanent value of gold, we are not more interested in the matter than any other commercial body in the country.

I AM extremely pleased to notice that the *Daily Mail* has taken our conciliatory remarks of a month ago to heart, and has extended the hand of kindly fellowship to us. For the first time in its existence (we believe we are correct here) it prints an article complimentary to the trades we represent. To be sure the matter is one on which it could not very easily find fault, viz., the Vittoria Street Art and Technical Schools. These it designates as a "successful experiment," and then proceeds to favorably review the work of the schools during the two years they have been open. "No one can fairly question the marked success to this unique and fortuitous combination of art and technical instruction. . . . . The laudable desire to go right to Nature is shown by the objects from which the students come eventually to draw. . . . . He (the student) is called upon to exercise his inventive powers in the production of more or less original designs." Again, speaking of the technical school proper, it says: "The really excellent work turned out in this department deserves more than a passing word of praise." We are glad, at last, to have earned the *Daily Mail's* approval. The article in question somewhat deplores the fact that the institution is kept so exclusively to the jewelry trades, and it advocates the admission of "ordinary" students other than the nominees of the jewelers, concluding its remarks with: "It is in the interest, not only of the trade but of the city, that this should be the case."

THERE is just one remark to which I cannot quite agree, viz., "The tendency of the teaching staff at this stage, and, in fact, in the whole school, is to eschew specialisation." It seems to me, however, that this should not be the case, but rather that the "teaching staff" should educate (*i.e.*, *e duco*—to draw out) any indications of "specialisation" that they may notice, and foster it to the fullest extent. It is the man with a special hobby, the man with a special avocation, the man with a special genius, either of brain or finger, that makes a mark in the world and rises therein; while the average masses toil on in wearisome labor. I look forward to the production of these "special men" as being amongst the best and proudest work of the Jewelers' School.

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent.

IT is somewhat remarkable that the committee of the Birmingham Jewelers' and Silversmiths' Association do not speak in quite such satisfactory terms of the school. In its circular, drawing attention to the commencement of the Winter Term of 1892, it speaks as follows: "It is with deep regret I have to record that both from the point of view of numbers, and of the average attendance of students, the term now closing has been unsatisfactory. . . . . It is imperative that the schools be filled, if not with jewelers' students, then with others from outside. The alternative, I think, would be a positive misfortune, as the school would thereby lose its distinctive character and teaching." The whole circular forms an urgent appeal to the flagging interest of the employers of youthful labor in our district.

I AM sorry that there should be any cause for regret to the promoters of this scheme, as the energy and ability displayed in its inauguration and carrying out seemed to foretell success. I would add my voice to the appeal of the Committee, strongly urging the advisability of all the learners in the trade joining the school, and attending regularly the course of lessons, amongst the best and proudest work of the Jewelers' School.

IT seems at first sight rather a remarkable fact that Birmingham is very poor ground for the retail jewelers. One would think that with their proximity to the makers they could buy cheaply, and thus tempt the public by offering goods at low prices. This, however, does not seem to be the case, and the retail trade of Birmingham compares unfavorably with that of many others of our large towns. On second thoughts, however, the reason of this is apparent. It simply means that everyone here is more or less intimately connected with someone engaged in the production of jewelry, who are glad to supply their friends with all they require at little more than cost price. Consequently, the shops are neglected, while the wholesale houses receive innumerable "private orders." This is especially the case just at Christmas time.

SINCE the commencement of the series of articles on "Window Dressing," I have had a look round at the Birmingham retail displays. I have no desire to say anything uncomplimentary of our own kith and kin, but I do hope that when the articles have run their course I shall be able, after the visit of inspection I then propose to make, to give a report which shall be really complimentary to the improved taste of our shopkeepers. Look to it, therefore, lest my wrath be upon you, oh! ye of the window and the counter.

MESSRS. SWINDEN AND SON, of Temple Street, have conferred a boon, not only on the trade but on the whole city, by their offer to give the exact time, per telephone, whenever requested. Every subscriber to the Telephone Exchange is thus placed in immediate connection with Greenwich.

I MIGHT chronicle, just at the last moment, that our Birmingham friends have spent a good old-fashioned Christmas, and are now ready for the New Year with renewed energy.

* * *

The invaluable invention of Mr. Dallmyer of a telephotographic lens, to which we referred at the time of the making of the specification, is now before the public, and will open up a new era in photographic work.

The Silversmiths' and Jewelers' Cricket Club.

THE smoking concert of the above club, in aid of the funds of the Silver Trade Pension Society, was held at the Freemason's Tavern on the 7th ult., as announced in our last issue. The movement was supported by the principal West-end Jewelers and Silversmiths, both wholesale and retail employers and employees. Every effort was made to maintain the character of the first concert, and it must be acknowledged that is was a perfect success. All pieces were well rendered, and some of them exceptionally so, and we have no doubt that a good sum was netted for the Pension Society. If there is any branch of the Trade which felt it did not belong to the cricket club, and therefore was absent, that branch had better band together and see what it can do in a similar way. We can only say we hope their efforts will be crowned with the same success that has attended those of the above club, which deserves the hearty thanks not only of the Silver Trade Pension Society, but of the whole Trade at large, to which it is both a pattern and example.

City and Guilds of London Institute Examinations, 1891.

WE have before us the report of the thirteenth examination in technology of the above institute, held in April and May, 1891. As a whole, the number of candidates presenting themselves increased in a far greater ratio than heretofore. Out of the thirty-six subjects in which examinations are held, many of which are largely subdivided, the following concern our trades:—Electro-metallurgy, which sent up nineteen candidates, of whom only eleven passed; metal plate work, thirty candidates, of whom only thirteen passed; silversmiths' work, although included in the curriculum, had no candidate; watch and clockmaking sent up sixty-eight candidates, of whom forty passed; thus showing a far greater percentage of passes in the latter subject than in either of the others connected with our trades. We shall shortly have the pleasure of reporting other subjects, now included in the curriculum, but in which, as yet, examinations have not been held. We must say we are extremely sorry to see so few representatives of our trades attending these classes and examinations. Unfortunately, it is not because they have any superior knowledge of their trade, as we know by painful experience, and it must be most discouraging to the authorities to see the classes so poorly attended, while other trades avail themselves of their benefits by the thousands. Our advice to every young man, in any way connected with the trade, even in the capacity of salesman, is, neglect everything you consider a pleasure and a pastime, and get that information by attending these classes, which alone can qualify you for the position you hold.

* * *

Art critics, in reporting on technical education in France some years ago, remarked, "These Art classes are supported by the whole of the Jewelry Trade, and it is remarkable to see how their subjective influence is reflected in the members of that craft." Surely the time has now arrived when we may say that history repeats itself; for, turning to Birmingham, we see the effects of the cultivation of Art all round, in which well-known members of the Trade stand prominen. Thus, in the programme of the lectures at the New Church Guild at Handsworth, we find the following down for lectures:—Mr. J. W. Tonks, "Japanese Art and Artists;" Mr. F. W. Goldsmith, of Messrs. G. H. Johnston and Co., on "Art Metal Work;" Mr. Osborne, Messrs. Walton and Co., "Rambles with a Camera;" Mr. F. Saxelby, "Glimpses of Elizabethan London." We hope to give a further account of some others.

Sheffield Notes.

(By our own Correspondent.)[*]

THE forty-eighth annual report of the Council of the School of Art, just presented, is a very satisfactory document. The extraordinarily long list of awards and successes achieved by the students during the past year has already been noticed in this column. In this connection the report just issued makes special mention of the case of Miss Mitchell, daughter of a former head-master, whose successes have been most exceptional. The Council report that the Town Council have increased their grant for the current year from £400 to £600. In the full expectation that this grant will be continued, the Council have established a scheme of local scholarships of £52 each for advanced art students between the ages of eighteen and thirty, renewable annually under certain conditions. Holders of these scholarships must have been students at the School of Art, and be engaged and intend to continue to work in some one of the Sheffield trades, in which a knowledge of decorative art is necessary. This is another proof of the close connection which exists between the school and the trades of the town, and a clear indication that the Council wisely intend to continue on the old lines in this respect.

THE representations noticed last month as having been made by the Chamber of Commerce to the Inland Revenue Authorities have unexpectedly borne fruit. Stamping facilities in Sheffield are to be still further increased. To the concessions mentioned last month will now be added the stamping of documents relating to the registration of trade-marks, providing that these documents are not upon parchment. For this latter privilege we have still to wait. As time is of little value in Sheffield we shall therefore continue for some time longer to hand our parchments over the counter of the office in Leopold Street, whence they are duly despatched to Manchester, where the awful process of stamping is accomplished. Providing no Sunday or Bank Holiday intervenes we may then have our documents by calling for them on the day but one following.

THE rapid increase of telephonic communication in Sheffield has necessitated the erection of new premises to facilitate its working. Part of the new buildings in course of erection by the Sheffield Telephone Exchange and Electric Light Company, Limited, in Sheaf Street, has just been formally opened. The completed portion includes a new switch-room, where accommodation will be provided for 4,000 subscribers. Should this number ever be reached, the company is prepared to erect another switchboard to accommodate an additional 2,000.

AN arrangement has been come to between the Great Northern and the Manchester, Sheffield, and Lincolnshire Railway Companies with regard to the latter company's Bill for powers to extend their system to London. This will facilitate the passing of the measure considerably, as the Great Northern were last session the principal opponents to the scheme then before Parliament. The opposition of the inhabitants of North London was no doubt the last straw which broke the back of the Bill, but this opposition, which it is fully anticipated will be repeated next session, is not expected of itself to wreck the Bill. Rumors are current of two other powerful railway companies having their eyes upon Sheffield, so that upon the whole our hankerings after increased railway facilities are likely to be gratified.

THE state of affairs in "Bull Week," so far as the silver trade is concerned, has not materially differed from the report of the state of trade given in these Notes some two months ago. Things have been decidedly mixed this Christmas. It cannot be said that trade is brisk, although some firms are very busy. On the other hand, business can scarcely be called bad, although many firms could execute more orders than they have on the books. Compared with Christmas 1890 things are decidedly quieter. The tendency at present is decidedly downwards, and this is the real source of anxiety. No one feels any pinch at present. In point of fact everyone seems to be entering into the spirit of the festive season, wisely refraining from looking too far ahead. A great deal may happen before this time next year to counteract the mischief done by the M'Kinley tariff.

OUTSIDE the silver trade a new industry has already been planted in our midst. The manufacture of sword-bayonets, for some unexplained reason, has not hitherto been carried on in Sheffield. The scandals arising from the experience of defective bayonets in recent warfare, has, however, compelled the War Office to turn to the place to which an average amount of common sense, on the part of the permanent officials, would have induced them to have recourse long since. The old firm of Saunderson Bros. has laid down extensive plant for the manufacture of sword-bayonets, so that with our armour plates and Armstrong guns we are in a fair way of being assured a certain amount of prosperity—whether peace or war betide.

Mr. J. D. Fisher, of High Street, Lincoln, supplied some of the diamond work to the ladies of Lincoln, for the presentation to the Lady Mayoress.

As it is more than probable that some "christening" is going on with the old and well-known name of John Forrest, it may be worth while to point out that no one has now a right to use this name and title, which with the goodwill, etc., was bought by another well-known manufacturer, Mr. Richard Thorneloe, who, in addition to the name, stamps every watch and chronometer with his registered trade-mark, the thistle.

At the Royal Microscopical Society, Mr. C. L. Curtiss described and exhibited a small heliostat made on the model of Mr. Comber. It met with general approbation, being simple and useful in any latitude between 15° and 70°. The same gentleman also exhibited a new form of microscope on the Nelson model, after which Mr. Nelson described his apparatus for the production of monochromatic light for the use of the microscope.

A subscription has been set on foot by the Microscopical and kindred societies for the widow of the late Mr. John Mayall in recognition of his services to microscopical science.

At a recent meeting of the Physical Society Dr. Raps exhibited the perfection to which he had brought his mercurial air pump, by quickly exhausting a Geissler tube to such a degree that a phosphorescent light made its appearance.

Messrs. Ahronsberg Bros., of 37, Albion Street, Birmingham, have supplied a very handsome silver-gilt presentation key for the opening of a hospital at Mexborough. It was designed after the old Roman style, with the initials of the title of the institution carved in the head. Messrs. A. Bros. cater somewhat largely for this trade; only very recently they supplied the medal for the incorporation of the Borough of Haslingdon.

Another child of the veteran Lord Grimthorpe has just been set up at the parish church at Tilney All Saints, Norfolk. It has only one dial, and chimes the Westminster quarters. It was manufactured by Messrs. J. Smith and Son, Midland Clock Works, Derby.

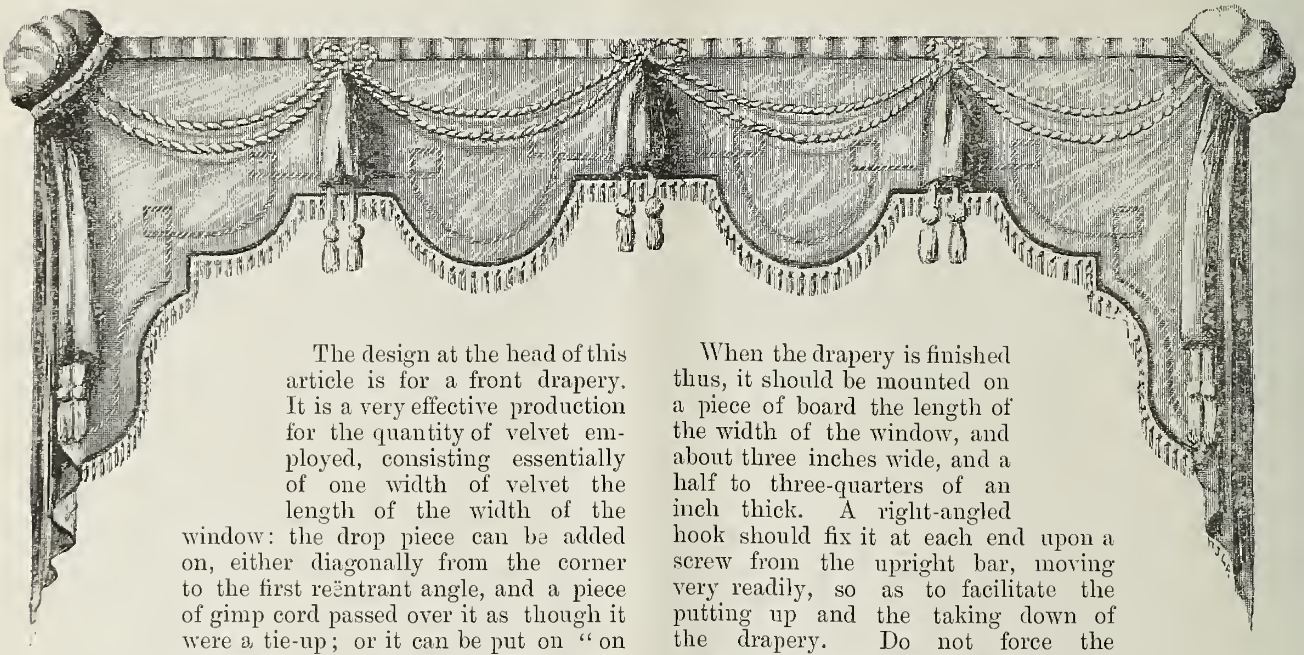
We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Windows and Window Dressing.

By the Editor.

(Continued from page 114.)

There is one very important point in connection with window dressing that is very frequently neglected, viz., having the bottom of the window at the correct height for the style in which it is to be dressed. Below a certain line things, even if seen, lose immensely both in distinctness and importance; while articles which are much above the line of vision are scarcely seen at all. At night much will, of course, depend on the manner of the illumination. The window now to be described we will suppose to be lit by electric light, or by Argand burners over its top. On a future occasion we shall have something more to say upon the question of lighting. Under any circumstances lights should be kept from view as much as possible. It is for this reason that draped windows and electric lights produce such charming results, as the lights can be brought down quite near to the goods without being seen, being snugly hidden by the curtains.



The design at the head of this article is for a front drapery. It is a very effective production for the quantity of velvet employed, consisting essentially of one width of velvet the length of the width of the window: the drop piece can be added on, either diagonally from the corner to the first reëntrant angle, and a piece of gimp cord passed over it as though it were a tie-up; or it can be put on "on the straight." There are three large box-pleats across the front, which should be cut a little hollow so as to show the back of the velvet, and these should here be lined with satin of a rather lighter tint. One width of velvet should then be cut diagonally at one-third its length, so as to get the two curtains out of one and one-third of the length of one. These should then be "fulled" or "bunched" at the top, then allowed to fall loosely, showing the front and back of the velvet alternately, and this should here be lined with the same colored satin as above. Cords and tassels may next be added, which give a remarkable richness and finish to a window drapery. They should harmonise with the velvet, or they may make a pleasing but slight contrast. Two tassels should drop gracefully from behind each curtain; the former should not be less than four or five inches long, nor less than one and a half to two inches in diameter. The tassels which drop from the box-pleats above may be smaller, although they should not be pimpin. They can be dispensed with altogether if desired. The cord should be a half or five-eighths of an inch thick, and should be either all silk covered, or, at least, partially so; a careless bow at each of the box-pleats gives them a finished appearance. At the top of the cornice is a row of flat box-pleats about two and a half to three inches wide. The edges need not be satin-lined, as the hem is sufficient to show velvet at the small openings made by each pleat.

It is always necessary to have some kind of edging, and for this purpose a good silk fringe, well knotted and of the same color as the satin, is decidedly the best. Good draperies are often spoiled by a plain hem, which has so much of the "Mother's make" about it. If the fringe is not resorted to, a cord or a gimp edging should certainly be employed. With a straight-backed drapery like this an additional gimp trimming should be used, which should be keyed at the corners. For this purpose a plain simple gimp is the best; flossy, dust-holding, fading patterns should be rigidly avoided. The gimp should not exceed a half an inch in width, otherwise it looks heavy. It is astonishing what a relief the small square keying at each angle gives, it also imparts a richness and finish to the whole thing.

In determining the length of the curtains much will, of course, depend upon the nature of the window-fittings; they could be as short as here shown, or twice the length. It is not often necessary for them to be as short as shown above. They should meet some "break" in the fittings, but this must be left to be decided as the case may demand.

When the drapery is finished thus, it should be mounted on a piece of board the length of the width of the window, and about three inches wide, and a half to three-quarters of an inch thick. A right-angled hook should fix it at each end upon a screw from the upright bar, moving very readily, so as to facilitate the putting up and the taking down of the drapery. Do not force the velvet unduly against the glass or it will soon crush, but press it very gently, so that it stands as near to the window as possible without damaging it. If electric lights be employed they should be placed behind the curtains and along the cornice, the wood-work of which makes a good support. The lights should be covered at their backs with silvered reflectors; firstly, to throw the light upon the goods and not in the dark unused recesses of the curtains, and secondly, because if the curtain lies upon the naked lamp, the latter will soon introduce itself to outside view by burning a hole through your curtain.

Jewelry lying much below three feet from the surface is usually beneath ones notice. Still there are many uses to which a floor of two feet from the ground can be put, and there are many styles of window-dressing in which it can be advantageously and effectively employed. On a future occasion we shall touch more fully upon this subject, but for the present we will imagine our window to be about five feet by four by three, and with a bottom a little over two feet above the pavement. If we were going to dress it with gold jewelry, or comparatively large things, we should rejoice in a window at this level. As we are about to dress it with diamond work, we fully realise that such a bottom would lie too low to display the details of a high-class piece of gem setting, and that scrutinising would be a back-breaking job, to say nothing of the fact that it would require an immense amount of stock to do justice to a window of such cubical capacity. We therefore elevate it with a false bottom about a foot high. The front of this slightly slopes away from the window, as shown in the sketch,* and is covered with velvet, upon which can be displayed the name of the firm. And here a word of caution may be necessary. Do not employ flaring large ornamental letters, certainly do not have them larger in proportion than those shown in the sketch; let them be smaller if anything. There is no type of letter that looks neater, nicer, or more artistic than antique somewhat condensed. The letters should be bevelled brass well burnished and lacquered, or mat gilt. They should be pinned with pins that go quite through the board, so that they can be taken off to be cleaned should it be necessary to do so. On either side of the name some slight advertisement can unostentatiously appear, but it should be a trump card, such as (if possible) "Court Jeweler," "To the Prince of Wales," "Jeweler by Appointment" (whatever that may mean), or if you have taken any medals they can be reproduced here with good effect, with the place and date at which they were obtained. If to neither of the above a claim is laid then "Diamond" or "Gem Merchant" serve the same purpose.

Upon the false bottom should lie the board which will form the absolute bottom of your window, inclined upwards at about eight or ten degrees. It should meet the front board either in a rabbit or mitred edge, preferably the latter. It should be shaped out so as to receive the back blocks, the latter in such a case would rest upon the false bottom. The bottom board should be velvet covered up to its meeting the back blocks, and if desirable a piece of cord can be laid and tacked along the joint the whole length of the window. This has a very rich and finished effect, but takes up some amount of room. On the other hand, the bottom board can be left unshaped and covered with a full width of velvet, and then you can advance or recede your blocks according to the style you purpose to employ. Some days you may feel you would like to introduce a few large things in cases, which would naturally demand more space; at others you may feel that you would like to make a speciality of some sort of article, with which you could not fill the window when at its largest dimensions.

Next we have to consider the curved back blocks. These should be got out very light in a window of this description; the back should be the stoutest, in which there should be a hand-hole for lifting the blocks about; the centre one should possibly have two, cut vertically. Their fronts should be cork-covered before the velvet is stretched on. A tool run round the edge gives a great point of finish, but it should be plain. We shall refer at greater length to this on another occasion. The two other segments are flat-backed, got out of half-inch stuff, with a strutted back, which also forms the handle for lifting it in and out the window; it has a step in front of about three inches each member, or a little less for the horizontal. Upon these we have shown two ring-trays upon easels—one single-stones, the other half-hoops. It would be as well to have these segments also cork-covered, so that if desired, rings need not be put here, but something else—bracelets, necklets, or what not. Upon the top of each of the three principal blocks is shown a velvet-covered bust, upon which can be displayed with the maximum effect a necklet, and several other things. This is a simple and effective stand, and susceptible of a great variety of changes in its mode of dressing; the consideration of these, however, we must leave till our next.

(To be continued.)

Our Letter from the Diamond Fields.

(By Vaalite.)

Kimberley, Nov. 26th.

HAD the Hebrew prophet chosen "diamonds" instead of "wars" to portend the end of the world, I should sometimes be inclined to shake in my shoes if I were a victim of the belief in prophecy, for on all sides one is hearing of diamonds and rumors of diamonds—not only in the sacred enclosure of the classic area, but also in outlying districts. Still, the most important are certainly those in and around the Premier, which you probably are aware does not include the whole of the estate upon which it is situated, the total of the estate being something like 30,000 acres; and although Mr. Ward is finding, on an average, 3,000 carats a week in developing the Premier itself—which recently have included a 40-carat stone and another of 80 carats—he is also testing other parts of the estate, with results that at present it may not be advisable to publish. The fate of the Premier is not altogether settled, although it is asserted that the De Beers will work it conjointly with Mr. Ward. But evidence of diamond-bearing strata are not limited to this estate; the artificial boundaries of individuals or nations are not regarded by nature, and people out here are fully aware of that fact. Accordingly the adjoining farms are being prospected, with more or less promising indications. One of the farms known as "Riches" is looking promising, while there is still strong evidences at Glendenhies; while the success of Messrs. Moir and Wilson have stimulated a "new rush"; and from "Belgravia" comes a 60-carat herald of the nether earth. But in the face of what has happened lately, a 60-carat stone may not create a very great impression. I never remember so many large stones being found about one time as there has been recently, and those from various depths. The Kimberley Diamond Company has celebrated its first year's working by a 58-carat stone; the N.E. Bultfontein has topped the list with one of 123¼, and another of 179¾. The New Gordan, too, although only a baby, has added its quota of large stones. This latter mine, as I ventured to prophesy at its reconstruction, is in a good way; they will have about 130,000 loads of blue, quite ripe in about a month or six weeks; we shall then see how its yield will compare with the N.E. Bultfontein; the latter are washing upwards of 50,000 loads a month, with a yield of about 1-7 of a carat to the load. They have enormous quantities of blue and yellow weathering, and there is some talk of suspending hauling. At Dutoitspan things are looking more promising. Mr. Leslie hopes very shortly to be able to report something very satisfactory in regard to Otto's Kopje. Despite all our regulations and laws, and what some people call the merciless administration of them, the I. D. Bing still plays sad havoc in all the mines not under the "compound" system; it is confidently believed that at least 15 per cent. of the totals of all diamonds found go through this channel; and even when the compound is in full operation, robberies are of enormous magnitude; a native has been known to swallow upwards of 500 carats of diamonds the week before leaving the compound, including a 50-carat stone. The quality of the Jagersfontein is still keeping up, as will be seen by the fact that the output for October was 9,520¼ carats, which realised £21,850. In various other parts of the county the river diggings are looking up, especially at Klipdam. I was speaking to a man the other day, who said he always goes down every week now to buy, whereas he only used to go occasionally, and that buyers often bring back with them £1,500 or £2,000 worth of stuff. There are also now to be seen some beautiful fancy stones from Barkley West district; but for all that, "the great monopoly" regulates the market with a very strong hand, and despite all the findings of other localities, they do not allow the market to become glutted. It is true the total exports of diamonds from the Cape during October was £573,036, compared with £314,892 in the corresponding period of last year; still, for all that, the total for the ten months ending October, 1891, was only £3,589,807, compared with £3,591,093 for the corresponding period of 1890, showing a slight difference of £1,286 in the favor of 1890.

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* Owing to the severe indisposition of the Editor, this sketch could not be executed for this number, but will appear in the next, when styles of dressing the same will be dealt with.

An item of immense prophetic importance to be mentioned is that Mr. A. D. Maffey has brought to Kimberley the first of the Tati gold, to the extent of over 300 oz. As I think I pointed out to you, there are men connected with this discovery well known in the jewelry trade. I recollect Mr. Dan Francis showing me, when in the old country, specimens of the first discovered reef; since that time they have been proving the property, and from information I have received, I should think this will ultimately turn out of extraordinary dimensions; I do not say it will rival the Randt, which is expected this short month to nearly double its output, compared with November, 1890, but it will help to earn for South Africa the title of the "Land of Gold and Diamonds."

Transatlantic Jottings.

MR. CHARLES L. TIFFANY, probably the widest-known jeweler in the world, and Mrs. Tiffany, celebrated their golden wedding on Nov. 30. It is only about three years since Mr. Tiffany celebrated the fiftieth anniversary of his launching into business, which, from a comparatively small beginning, has developed into the colossal concern of to-day, employing between 1,200 and 1,300 hands. Seven acres of ground have recently been taken for the erection of new silver and plated factories.

* * *

THE New York Jewelers' Association annual banquet was recently celebrated with all the grandeur of display characteristic of these gatherings. We feel strongly inclined to give a verbatim report of one of these banquets, just to show the trade how they do things on the other side.

* * *

THANKSGIVING Day was also well celebrated, most of the jewelers closing and presenting their employés with turkeys and what not.

* * *

AN exhibit at the World's Fair, likely to be of great interest, is one which will be supplied by the U.S. Patent Office. It will consist of models illustrating the evolution of the modern horological machine from the old Babylonian water-clock. It is well-known that one of the authorities of this office has given considerable study to this subject, so that the exhibit is likely to be complete.

* * *

IT is stated that the French jewelers are combining together to make such a show at the Columbian Exposition as shall make all the world acknowledge that Paris is the modern Ratnapora—or City of Gems. We are not likely to hear of any such "combine" with English houses.

* * *

THE diamond cutters in New York have recently organised a union. They have been granted a charter by the American Federation of Labor. It includes nearly every diamond cutter and polisher in the City of New York. These steps, they maintain, are necessary to prevent further reduction of prices, as already several reductions have been made during the last few years.

* * *

THE first young lady to learn diamond cutting and polishing in New York, after twelve years' work, has recently been married.

* * *

PHILADELPHIA boasts of the largest automatic clock in the world, being four times as large as the celebrated Strasburg clock. It has upwards of 200 figures, nearly a foot high, in rich costume; it cost nearly 20,000 dols., and weighs 4,000 lbs.; it stands 17 ft. 6 in. high and is over 12 ft. wide.

Round the Watch Factories.

There is a rumour current that the Elgin Watch Company are about to make further additions to their factory along the river bank, and will employ 900 more hands, so as to be able to make their turn-out of watches run up to 2,500 a day.

A share in the American Waltham Watch Company realised the other day 167·50 dols. The company is still doing an immense trade.

The Illinois Watch Company has recently introduced a new nickel movement which is spoken very well of.

In many of the factories orders are sufficient to last fully a month or even two.

There was a fire the other day at the Elgin Company, but fortunately it did but very little damage, as they could ill afford to be put out just now.

The Kenosha, Wis., Watch-Case Company is limiting its output.

The Globe Watch Company, of Grand Haven, Mich., with a capital of 50,000 dols., is about commencing to build.

I hear the Columbus Watch Company do not intend to reduce the prices paid to their hands, notwithstanding the fall in the "eighteen" size.

More building is in course of construction at the Waltham Dial Company, and its capital stock has been increased to 100,000 dols.

The factory of the Waltham Watch Tool Company is running very hard, being kept very busy, especially with their lathes.

The San José Company turned out its first watch on October 15th, fourteen days after the first trial of the machinery.

A New York Journal says, "In all the history of the American Waltham Watch Company there has never been a strike in its works, although many of the workmen are affiliated with labor organisations. The reasons become apparent on a visit to Waltham. It is a model town, and the works constitute a model factory. Every possible provision is made for the safety and comfort of the employees. They are paid the highest market wages, and where men and women do the same class of work their pay is upon the same scale. Married workmen are encouraged to own their own homes, and for this purpose the company not only sell them sites at cheap rates, but also advances them money to build, which is repaid by instalments. Boarding-houses are also maintained for the operatives, which are so conducted that they pay their running expenses and no more. In addition, steady work is afforded to all employees the year through."

Our Unwrought Materials.

LARGE TUSKS OF IVORY.

THE large tusk that was exhibited at the German Exhibition, and which measured seven feet nine inches, has been acquired for the National Collection, and will henceforth be seen at the Natural History Museum, South Kensington. Unfortunately it is without a history, and there is nothing morphologically to separate the tusks of the two species of elephant living to-day. But as it came from Zanzibar it probably was the property of an African elephant. A larger one still was sold at the last ivory sales, but as it was bought for the Chicago Fair its price is no criterion of its value.

PRODUCTION OF ALUMINUM.

WE are informed that amongst the new electrolytic processes for the production of this valuable, but perhaps sometimes a little over-rated metal, the Minet process for the production of aluminum by the electrolysis of fused fluorides of sodium and aluminum, and chloride of sodium, which, during the past few years, has been experimented with at the works of Messrs. Bernard Frères, Creil, near Paris, will be worked at St. Michel (Savoy). The motive power will be supplied by a waterfall, and to commence with, two dynamos of 3,600 ampères and 50 volts each will be employed. Only 6,000 horse-power will be used, but it is proposed to increase this to 20,000 horse-power. The actual cost price of aluminum by the Minet process is 3fr. 50c. (2s. 11d.) per kilogramme, not including the motive power, which can be calculated, given, as stated by M. Minet, that one horse-power yields 30 grammes of aluminum. The production of one kilogramme of aluminum requires 1½ kilogramme of fluoride of aluminum; 100 kilogrammes of aluminum are produced on electrolysing 150 kilogrammes of fluoride of aluminum, 200 kilogrammes of alumina, and 100 kilogrammes of chloride of sodium. To prevent the corrosion of the tanks by the electrolyte, M. Minet has devised the combination of a metallic tank shunted on to the cathode through a resistance, so that there is no interruption in the electrolysis of fluoride with aluminum, and no fluoride of the metal of which the tank is made is formed, which metal would be deposited on the cathode instead of the aluminum.

NEW METHOD OF NICKEL PLATING.

A NEW method of nickel plating has been invented by Mr. L. Mond, in conjunction with Messrs. Lang and Quincke, all of Norwich. The process is thus described in *Electricity*:—"It is found that on passing carbonic oxide gas over nickel reduced to the metallic state by nascent hydrogen, and maintained at a temperature of about 30°, the two bodies unite and form a liquid compound, which boils at 43°, and is decomposed at 60°. On passing the vapour of this compound over objects maintained at 60° the nickel is deposited on them in a bright metallic state. The liquid, naturally, can also be used for electro-deposition of nickel, and for this purpose the depositing surface need only be coated with graphite."

THE NICKEL MINES OF CANADA.

THE six mines in Ontario yielded a rich harvest last year, and are still producing large quantities of metal. There are four furnaces and 500 men at work in the Sudbury district, and supplies show no sign of diminishing. It is estimated that the product of the Canadian Copper Company's property for one month would supply work for the Camden Nickel Works for nearly eighteen months.

PROCESS FOR THE EXTRACTION OF GOLD AND SILVER.

ACCORDING to accounts sent to us, Mr. John Cuninghame Montgomerie, of Dulmore, Ayrshire, in conjunction with Mr. Henry Parkes, of London, claim to have discovered a process for the extraction of gold and silver from the refractory gold and silver sulphide ores of the Champion Mines, in the Thames district of New Zealand. These ores are known to be of a very refractory nature. During the past few months Mr. Montgomerie has personally carried out a large number of experiments at his "Tam o' Shanter" Hone Works on this ore, with the result, it is announced, that he had reduced the time for treatment from sixteen hours to four hours, and with an extracting power of from 95 to 99 per cent. of gold, and from 90 to 95 per cent. of silver. From trials on two special grades of the Champion sulphide ores, the following results have been obtained without the ore being calcined:—Ore assaying 1oz. 1dwt. 11gr. gold, and 39oz. 4dwt. 21gr. silver, 98 per cent. of the gold, and 93 per cent. of the silver were extracted; and from ore assaying 2oz. 9dwt. gold, and 59oz. 19dwt. 7gr. silver, as high as 99·62 per cent. of the gold, and 95·39 per cent. of the silver have been taken out.

BURMA TIN DEPOSITS.

ONCE more attention is directed to the tin deposits of Burma by the official report of Mr. Hughes, of the Indian Geological Survey, who declares it to be a most extraordinary deposit, quite beyond anything he has ever seen or heard of for its richness. He has traced the reef for miles, and in assaying a sample of it, a cubic yard gave nearly 1½ cwt. of tin. There is nothing, he says, that he would term a lode, but rather a zone of metamorphic rocks through which the ore-bearing quartz can be traced. At one spot, Khow Muang, he estimates the reef in sight at 60,000 tons.

ALUMINUM AND PHOTOGRAPHIC INSTRUMENTS.

THE suggestive paper of Mr. G. L. Addenbrook, in the December number of the *Journal* of the Camera Club, on the use of aluminum for the metal work in photographic instruments ought to be read by all manufacturers of that class of article. He would not only use it for flanges and that sort of thing, but for tripod heads, and, in fact, in most cases where other metals are now employed.

The Clerkenwell Benevolent Society.

THE annual concert in connection with the above excellent institution was held on Nov. 30th at the Agricultural Hall, Islington. As is usual on these occasions the company were treated to a host of the first talent of the day, including Madame Antoinette Sterling, Mr. Santley, Mr. Iver McKay, Mr. Maybrick, Miss Gomez, and several others, all of whom had something specially good for the occasion. The Trade must feel a great amount of pride in being associated with this grand old charity. In few instances have its benefits been more felt than last year, when we had five months of exceptionally severe weather. During that trying time the society distributed over 2,000 sacks of coal to needy poor, in addition to upwards of 600 quarterns of bread. The concert was well attended, and the whole reflected great credit upon Mr. Woodman, who had the management of it.

MESSRS. BOTWRIGHT AND GREY, manufacturing opticians and shippers, desire us to mention that their representative will be in Australia, New Zealand, and Tasmania about the end of next February with a complete set of their samples, &c., and will be glad to see customers.

Watch and Clock Making.

(*Continued from page* 113.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making.

(III.)—Honors Paper, 1880.

QUESTION (1).—Define "vis viva," moment of inertia, radius of gyration, engaging and disengaging friction, and explain g = 32·2.

Answer.—"Vis viva" is a term which denotes the product of the mass of a body into the square of its velocity, and is therefore equivalent to twice the amount of work stored up in a moving body, or to twice its kinetic energy.

If a force P pounds, acts on a mass M pounds and generates an acceleration f, then

$$M : P : : g : f$$

$$\therefore\ f = \frac{P\ g}{M}\ .\ .\ .\ .\ .\ (a)$$

Again, if v denotes the velocity due to P's effect on M, then

$$V^2 = 2\ s\ f\ .\ .\ .\ .\ .\ (b)$$

substituting the value of f in (*a*) for f in (*b*), then

$$V^2 = 2\ s\ \frac{P\ g}{M}$$

whence

$$V^2M = 2\ s\ Pg\ .\ .\ .\ .\ .\ (c)$$

$$\therefore\ \frac{V^2M}{2\ g} = s\ P\ .\ .\ .\ .\ .\ (d)$$

The left-hand member of equation (*c*) denotes the "vis viva" in absolute units, and the right-hand member of equation (*d*) gives the work stored up in a moving body, in foot pounds, or its kinetic energy, in the same units, which is equal to twice V^2 M absolute units, and therefore equal to twice the "vis viva."

If the mass of every particle of a body or material system is multiplied by the square of its distance from a straight line, the sum of these products is termed the moment of inertia of the body or system in reference to that line.

If K denote the distance from this line or axis, at which the whole mass of the body should be collected, so that its moment of inertia remains unchanged, that is, so that we have

$$K^2\ \Sigma\ \Delta\ m = \Sigma\ r^2\ \Delta\ m.$$

Where *m* denotes the mass of a small part of the body, then K is termed the radius of gyration of the body in respect of the axis; $r^2\ \Delta\ m$ being the moment of inertia of a small particle of the body, and r the distance of the particle from the axis. Engaging and disengaging friction may be defined as follows:—

If two surfaces rotate about fixed centres, and motion is communicated from one to the other, so that the line which contains the locus of the point of contact crosses the line of centres, then the friction between the surfaces due to the motion before the line of centres is termed engaging friction, and the friction between surfaces due to the motion past the line of centres is termed disengaging frictions. Regarding g = 32·2 (see (2) in II., pages 255 and 256).*

Remarks.—The term "vis viva" originated with Leibnitz, to signify the force of a body in motion, as distinguished from the statical pressure of a body, which he termed "vis mortua." Descartes asserted that M V expressed the measure of the force of a body in motion, and this contrariety of opinion led to the controversy referred to on page 255. Professor Rankin designated the expression

$$\tfrac{1}{2}\ \Sigma\ m\ v^2$$

actual energy, which again has been called by Thomson and Tait "kinetic energy" ("kinetics" being the name given to that part of mechanics which treats of motion apart from the cause producing it), which term denotes one half the "vis viva" of a moving body, or its actual energy as given in (*d*) and (*e*), pages 255 and 256, vol. xvi., in foot pounds.

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* The answer in regard to "g" on page 255, vol. xvi., may be given in another form than that expressed in the remarks on page 256, by equation (*m*). Equation (*i*) could be used thus: let t denote time of an oscillation, then squaring both members

$$t^2\ g = \pi^2\ L\ .\ .\ .\ .\ .\ .\ (e)$$

whence

$$g = \frac{\pi^2\ L}{t^2}\ .\ .\ .\ .\ .\ .\ (h)$$

but the difficulty consists in the fact that it is practically impossible to determine experimentally the time of a single oscillation to any degree of certainty; hence, it is necessary either to find t by finding first how many oscillations a pendulum makes in a given time.

When

$$t^2 = \frac{T^2}{n^2}\ .\ .\ .\ .\ .\ .\ (i)$$

and then use equation (*h*), or substitute value of t^2 in (*i*) for t^2 in (*h*), them

$$g = \frac{\pi^2\ L}{\frac{T^2}{n^2}}\ .\ .\ .\ .\ .\ .\ (ii)$$

whence it again takes the form as in (*m*), page 256, vol. xvi.

When a pendulum is used for such a purpose the only serviceable mode of suspension is that of the knife-edge. Suppose a rod is used, then on one end a knife-edge is fixed, and another is made movable along the rod and provided with a clamping screw. The second knife-edge is then adjusted by experiment until the rod makes the same number of oscillations about either edge. When the adjustment is completed the distance between the respective knife-edges will give L, and evidently in determining L, n can also be found, and T is quite optional.

I may also explain the method by connected bodies generally, called "Attwood's machine," and state another answer as to g, which may be deduced from that. This instrument is often elaborately got up for the lecture room; but the following will explain the general principle:—Mount a pulley, such as is used in regulators on fine lathe centres, so that it moves with the least possible frictional resistance, that is, like the balance staff in an American lever timepiece. Connect two ordinary symmetrical equal clock weights by a fine thread and sling them over the pulley. The pulley requires to be mounted as high, and the thread to be as long as possible. The operator will observe that when they are thus mounted the slightest impulse sets them in motion, and that they move on with a uniform velocity (neglecting a slight retardation due to friction at the centres of motion, inertia of pulley, and inflexibility of the thread), until the weight comes in contact with some obstacle.

The mode of the principal experiment is this:—First ascertain the mass of the weights in pounds very carefully. Place a small bar on the top of one of the weights (the mode as to how it is to be placed will appear evident from the mode of using it).

Let the loaded weight be uppermost, let it start from rest, and carefully observe the time of its starting by seconds. After motion has taken place for one, two, or more seconds—according to the space at command—a provision is required by which the small weight producing motion is taken off. For instance, if the supplementary weight projects, and the loaded weight passes through a hole in a bracket of just sufficient clearance that the former will remain on the bracket. After this, motion is allowed to go on—which will now be uniform—the space, described in the next observed time in seconds, will give the acceleration. The space is found by placing an obstacle in the way of the ascending or descending weight, so that motion is arrested; then the space is measured from the position of the descending weight at the instant the supplementary weight was taken off to its position where it came to rest.

To find the acceleration of gravity we proceed thus:—The reader will observe that two seperate periods of time have elapsed in the course of experiments, let ψ denote the first period in seconds and $\psi,$ the second, then if v denotes the velocity acquired at the end ψ and f the acceleration

$$v = f\ \psi$$

$$\text{When } f = \frac{v}{\psi}.\ \ .\ \ .\ \ .\ \ (k)$$

During $\psi.$ the velocity remains constant, hence if s denotes the space either of the weights moved over, then

$$s = v\ \psi.$$

$$\text{hence } v = \frac{s}{\psi,}\ .\ \ .\ \ .\ \ .\ \ .\ \ (l)$$

The principle of "inertia" was first recognised by Galileo, and that of "moment of inertia" is due to Euler, who gave it the form

$$\int r^2 d\,M,$$

and in this form it holds good to-day.

The principle of "moment of inertia" is of the utmost importance in all rotary machinery, and hence in Watch and Clockwork especially, since "motion against time" is the practical mission of every timepiece. Any workman who is in the habit of applying balance-springs will have observed that of two balances of the same weight, but of different *size*, the larger will require a *stronger* spring. In fact, suppose one is double the size, but the same weight, then it will require a spring four times as strong, which shows that mere weight, apart from size, is no guide whatever. (The relative proportions, variations of time, weight, size, and strength of spring will be fully treated in connection with question (10) in III. Honors Paper.)

It is also very important not to lose sight of this principle in the construction of escape-wheels, for in the case of two wheels of the same thickness, and one twice the size of the other we have

$$M r^2 : M_, r_,^2 : \phi_, : \phi. \quad . \quad . \quad . \quad (9)$$

where M and $M_,$ denote the masses of the wheels, r and $r_,$ their radio of gyration, and ϕ and $\phi_,$ their angular acceleration.

Let $M =$ unity, then $M_, = 2^2\,\pi$, if the thickness equals unity and the masses are expressed in terms of the volume then

$$1 \times 1^2 : 2^2 \times 2^2 :: \phi_, : \phi \text{ or } 1 : 16 :: \phi_, : \phi \quad . \quad (s)$$

Thus the resistance to the moving force is sixteen times greater in the larger wheel than in the smaller wheel, from which we learn the fact that it is highly expedient to make all moving parts as light and as small as geometrical conditions will permit. Of course this conclusion does not apply either to the balance or pendulum, for this simple reason, that in a train of wheels resistance to motion is a waste of motive force, and in the balance and pendulum its inertia tends to neutralise disturbing forces.

Substitute value of v in (*e*) for v in (*k*), then

$$f = \frac{\frac{s}{\psi_,}}{\psi} = \frac{s}{\psi\,\psi_,} \quad . \quad . \quad . \quad . \quad (m)$$

Again, if M denotes the mass of the two weights, and m that of the supplementary weight, then

$$(M + m) : m :: g : f$$

$$\text{whence } g = \frac{(M + m)\,f}{m} \quad . \quad . \quad . \quad . \quad (n)$$

Substitute value of f in (*m*) for f in (*n*)

$$\text{then } g = \frac{(M + m)\,\frac{s}{\psi\,\psi_,}}{m} = \frac{(M + m)\,s}{m\,\psi\,\psi_,} \quad . \quad . \quad . \quad . \quad (p)$$

If the periods of observation are units of time, then (*p*) takes the form of (*n*).

g may also be analytically expressed thus: Let the origin o be a point in the line of motion of a particle m, falling freely, and let x be parallel to it, then

$$\frac{d\,x}{d\,t} = v \text{ and } \frac{d\,x}{d\,t}\,m$$

is the momentum of the particle, and therefore

$$\frac{d^2\,x}{d\,t^2}\,m$$

is the expressed momentum increment in a unit of time, which is equal to the earth's impressed momentum increment in a second of time; hence

$$\frac{d^2\,x}{d\,t^2}\,m = m\,g \therefore \frac{d^2\,x}{d\,t^2} = g.$$

(*To be continued.*)

W. Ellis and Co., Limited, has been registered with a capital of £2,500, to carry on business as watchmakers and jewelers. The present address of the company is in Thavies Inn, Holborn.

The Silver Trade Annual Dinner.

THE fifth annual dinner, followed by a smoking concert, of the members of the Silver Trade Council, London, has been held at the Falstaff Restaurant, Eastcheap, and was numerously attended, covers being laid for 170, and 156 guests were present.

Mr. J. Jarvis (the president) occupied the chair, and was supported by Mr. John Griffiths, secretary of the council; Mr. W. S. Dear, of the London Society of Silver Plate Workers; Mr. W. Durrant, the London Society of Silver Spoon and Fork Finishers; Mr. Dan Leighton, Silver Plate Workers; Mr. H. G. Long, Silver Plate Polishers; Mr. A. E. Baker, vice-chairman; and others.

The chairman, in proposing the toast of the evening, "Success to the Affiliated Societies," began an eloquent speech by expressing his sincere pleasure and gratification in seeing such a splendid attendance of the members of the silver trade on that occasion, which he anticipated was a hopeful augury of a more brilliant and encouraging success in the future. (Cheers.) It was a proof, if proof were indeed required, of the further advance of unionism; and he could assure his fellow-workers in the staple industry in which they were all engaged that they ought to take seriously and earnestly to heart the great and noble principles which prompted and guided the cause of federated workmen. (Applause.) He had had the pleasure, more times than one, in presiding over the annual gatherings of the London Silver Trade Council, and he was pleased to say that each revolving year added to their numbers and strength; for it was a gratifying fact to record that whilst they started with only seventy members sitting down to their first banquet, they were favored that night with the presence of no fewer than 150 gentlemen. (Loud cheers.) It must be patent to all of them that it was their bounden duty to adhere to the strict principles of unionism; for it must be obvious that, when rightly and properly conducted, a good trade society conferred inestimable benefits on the workers, whilst at the same time it was by no means inimical to the best interests of the employers. (Cheers.)

Mr. Dan Leighton, in acknowledging the toast of "The Silver Plate Workers', Spoon and Fork Makers', and the Small Silver Workers' Societies," endorsed the observations of their esteemed chairman as to the benefits of unionism. He was followed by Mr. H. G. Long, in response to the toast of "The Silver Plate Polishers', Spoon and Fork Filers', Finishers, Chasers, and General Silver Engravers' Societies."

Mr. John Griffiths, replying to the toast of "The Silver Trade Council," said:—It is rather more than seven years ago since I entered into a new world of thought. I could not help it. I had for some years travelled, and as a corollary my mind has expanded, and has taken in what we know as the principle of trade unionism. I could not help thinking, although sometimes we only think—it was in this very room—on the occasion of our first annual dinner, held on the evening of the 19th of March, 1887 (it was not then called a trade dinner, as it was convened by the Plate Workers' Society)—that I had the honor as one of the respondents to the toast of "The Visitors" to throw out a few suggestions. They, as you know, were not well received. It was said to be out of place; but it was the only opportunity I had. One suggestion was that there should be a medium by which the existing four societies might be brought into line for common interests. The following November your Silver Trade Council was established, and you conferred upon me by a unanimous vote, given by the representatives of those four societies, the secretaryship. (Cheers.) Since then your council has grown by the addition of three more societies. Of what use are these societies? More than we can possibly measure. Take the Trade Guilds—they do not like to call it a trade union—established over 700 years. That was a small beginning. Then what may we not become? With us it is essential. Most of the industries of the kingdom are organised, and they tend to limit the amount of labor necessary to this or that particular trade. What is to become of those men who cannot obtain employment in those organised industries? They will surely take the road of least resistance, *i.e.*, they will drift into those trades not organised, and consequently, through the ever-growing system of the subdivision of labor, will help to lower the standard of skill and of our life conditions, and as a sequence there will be more friction and a lowering of our moral tone. (Cheers.) The formation of these societies is no menace to our employers. Our interests are mutual, and besides, they tend to quicken the better aspirations of the men, and make them less dependent upon charity. It tends to strengthen their self-reliance, and to govern and direct their better qualities. Therefore, we are not organised for aggression, but for defence against the encroachment of surplus labor of other organised industries, and we claim to have the right, not privilege, to direct and govern our own forces. The unionism I advocate is the unionism of mutual cohesion, and not of coercion. Those who do not agree with us, we must convert, and not make them enemies to our cause, and see that our policy should be prospective and not retrospective.

The toast of "The Silver Trade Pension Society" was proposed by Mr. John Ludford, and in the course of his remarks he said he was able to announce that the benefit was another financial success, and that as soon as the committee met, in a few days, the balance-sheet would be issued to the trade; and, thanks to the energy of their friend, Mr. Griffiths, they would in less than two years have handed to the Silver Trade Pension the sum of £130.

Mr. W. S. Dear, one of the trustees of the Silver Trade Pension Society, responded to the toast, and stated that as there were some who were not subscribers present he would point out the objects. They were to aid poor and aged persons, of either sex, who had been employed in any capacity in the silver trade. Pensions are granted of £10 per annum to females, and £15 to males, and an extra allowance in proportion to the amount of subscriptions paid to the society by the subscriber. These advantages were to be obtained for the small subscription of five shillings per annum.

The concert (in which Messrs. Lindley, Darby, W. Durrant, Arthur Lawrence, F. Hewson, Edward Garner, and many others, took part) was in every way a decided success, and reflects very great credit upon those who were responsible for the arrangements.

The Chicago *Jewelers' Journal* for November is a special silver number, containing full-page photos of the heads of the various silver houses out West, each accompanied by descriptive text. We have often considered the advisability of doing the same in the Watchmaker, Jeweler, and Silversmith, and of producing such a series of representative men as we have done for our other journals. In these lists are included men holding the highest positions in the land, and men who are well on towards millionaires, which facts are perhaps to be accounted for by their appreciating the indispensability of publicity, a secret which it must be acknowledged has yet to be learned by the majority of our trade.

"Weep for the fallen!" Dissatisfied with the prosperity enjoyed under the old traditions of Free Trade, the Government of New South Wales have imposed the almost prohibitive tax of 15 per cent import duty on our wares. Still, they *must* have the useful and indispensable of our productions, and the luxuries they *will* have. We shall not offer goods at 20 per cent cheaper; it is they who will have to pay for the goods, and the tax too.

In and Out the Courts.

The Charge against a Leicester Jeweler.—Many will be pleased to hear that the trial of Mr. Jobson, of Leicester, on a charge of conspiracy, has entirely fallen through. It is often remarked that one tale is good till another is told, and now that Mr. Jobson has had an opportunity of a hearing, and we have heard his tale, we are disposed to consider that he was among the victims of the man Redhouse. It is perhaps a pity that the trial was closed before it was thoroughly gone through, as Mr. Jobson would then have had an opportunity of explaining that part of the affair which certainly appeared to require explanation. The facts of the case are these: Mr. Jobson wrote to Mr. George, a London Jeweler, for a character of Redhouse, whose report was to the effect that the latter was strictly honest and steady, and, as far as he knew, respectable. He further informed Mr. Jobson that Redhouse had since bought a business, and was doing well as a wholesale and retail jeweler, and that he believed that Redhouse had lately come into a legacy of £1,000. That Mr. George himself believed what he said was evinced by the fact that he lent Redhouse £150, so that he, too, could be numbered amongst the victims. Then there were other facts known to Mr. Jobson; firstly, that Redhouse was the nephew of a gentleman of title, and secondly, that he had seen Redhouse's bank-book, which showed a balance of £765. It was only natural in the face of all this that Mr. Jobson should have replied to the wholesale people that he considered Redhouse all right for £100. It is also what one would expect—presuming Redhouse to be acting on the lines of getting stock and converting it into money—that he should try to dispose of some of his goods to Jobson at a tempting price on the assurance that he had bought them cheap, and did not want to make a profit out of Mr. Jobson, and that, under such circumstances, the latter should have bought so largely as to be obliged to resort to pawning them to keep up his working capital. However, before the trial got to anything near the end—indeed, as soon as the letter of Mr. Jobson to Mr. George, and the latter's reply to it was put in—the judge considered the charge of conspiracy had fallen through, and the trial was brought to a close. If Mr. Jobson has been duped in this manner, no one can withhold sympathy from him, as it is no more than many others would have done, and are in the habit of doing. At the same time, it is very hard for the wholesale firms who, believing Mr. Jobson to be not only above suspicion, but also beyond making a mistake, should have to lose their goods through parting with them on such a reference. The case is not without its lesson to all business men.

The Licence and Travellers.—At the Frome Police-court recently, Lazarus Simon, traveller for Messrs. J. Harris and Sons, Jewelers, Finsbury Pavement, was summoned for dealing in plate and not having a licence so to do.—The evidence showed that on Sept. 2nd Mr. William Kelly saw defendant sell a gold albert to a butcher's assistant, the chain being handed over at the time on £1 deposit being paid, the remainder, £3 10s., to be paid in monthly instalments. The defence was that the defendant being a *bonâ-fide* traveller of the firm, simply accepted the order for the chain, the selling being done by his employers. The magistrates said the case was an important one, and they were not unanimous in their verdict. The majority considered the case proved, and inflicted a fine of 20s., but were willing to state a case. Another similar action was brought against Leon Fisher, Gill Street, Nottingham, on behalf of the Commissioners of Inland Revenue. The evidence showed that defendant employed a traveller, or agent, to canvass and sell watches, and that the watch in question was sold in the Station Inn, Morton, when he was not licensed to sell on any other premises than his own at Nottingham. The defence relied on a written agreement showing that the watch was not actually sold, as it remained the property of the defendant until the payment of the last instalment; also that the sale, if there was one, was made by the defendant's agent, a view the Bench did not accept.

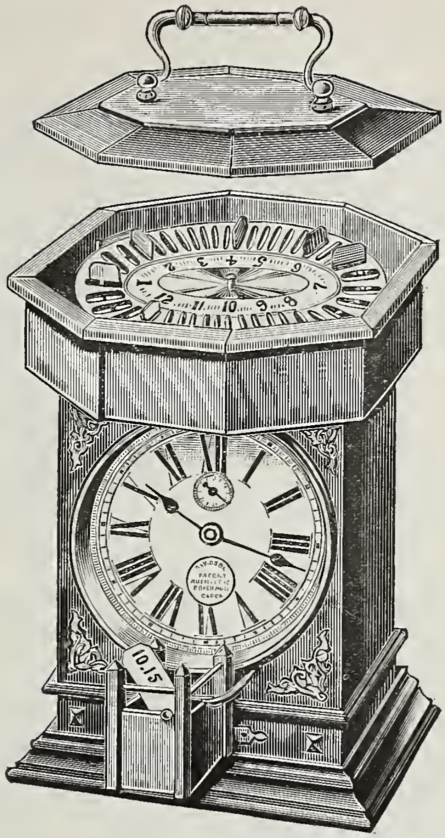
Appro. or Sale.—A somewhat curious case was heard on December 9th at the Bradford County Court. Mr. Solomon Lyon, wholesale jeweler, of Birmingham, sued Messrs. Henry Arensberg and Son, pawnbrokers and jewelers, of Bradford, for £35, the price of a ring. It appeared that the plaintiff's traveller called upon Mr. Louis Arensberg on February 17th of the present year, when Mr. Arensberg selected a half-hoop diamond ring, the price of which was £35. It was arranged that should the article not be sold it should be exchanged for goods of a similar value on the next visit. In August Mr. Arensberg said he had not sold the ring, and proceeded to pick out other goods for exchange. He offered, however, only £29 for goods marked clearly £52, and the traveller, refusing to entertain the offer, went away. Subsequently the ring was returned to Mr. Lyon, who now held it under protest. Mr. Macmaster, for the defence, said the understanding was that they might either exchange or return the ring. Mr. Louis Arensberg, in evidence, said that the usual custom was for him to buy goods on sale or return. If the goods were sold before the next visit of the traveller, they would then be paid for. If not sold, they would be returned. His Honor remarked that in this case the jeweler was simply carrying on business with the capital of the manufacturer. Mr. Arensberg said that was so. On the suggestion of his Honor the defendants agreed to accept goods to the value of the ring in exchange, and the case was adjourned for a month, his Honor remarking that he hoped he would hear no more of it.

Things New and Noteworthy.

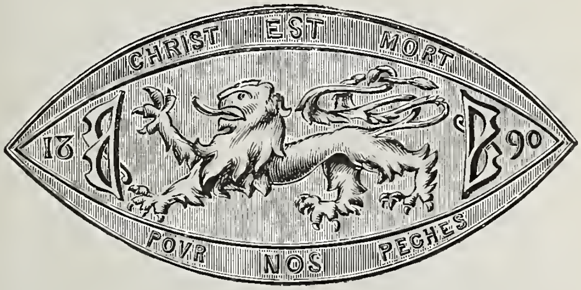
An Automatic Memorandum Clock.

One is often at a loss to know whether to be amused or disgusted at some of the various "inventions" that are brought out in connection with clocks. Not very long ago a man patented a clock that rang one up at any given hour, heated his water for shaving, made his coffee, and cooked his eggs and bacon. One wonders why it did not also take him to business; this would have been just about as practical as the other claims. But although these claims are extensive they are no more absurd and useless than many others of far less pretensions. It is very rarely indeed that one has the pleasure of seeing anything that is really valuable, practical, useful, and new; but all these claims have, we think, recently been established for a clock invented by Mr. Jno. Davidson, of High Street, Wick, N.B., which has been patented in England, Germany, and America.

Added to all the other characteristics there is another of equal importance, and that is simplicity, which is shared to such an extent by this clock, that a glance at the above illustration will immediately explain its nature. It is called an "Automatic Memorandum Clock." It will be seen that the top lifts off, exposing small receptacles into which 48 tablets can be put, opposite the time at which they are to act. When those specified times arrive, down falls the memo into a receptacle in front, showing that Mr. Jones is due 3.30; which fact is further impressed upon the mind by the ringing of a bell. The thousand-and-one ways this invention will prove of service to business men soon become apparent upon consideration. It does away with making notes; it facilitates making use of every moment of the day. If a principal should happen to be out, and Mr. Smith calls and says he has an appointment at 1.30, the next in charge can easily open the clock and see if such is the case. For the hospital and sick room it must prove invaluable.



Messrs. P. Vaughton and Sons, Gothic Works, Great Hampton Row, Birmingham, have recently supplied some silver heraldic badges for Earl Beauchamp. The actual size of the badges is 5½in. in length and 2 5-8in. in width. The centre portion of the badge is occupied by a representation of the "Lion passant queue fourchée." The form of the "lion," which is embossed in high relief and carved, is based on that of one of the lions from the shield of Prince John of Eltham in Westminster Abbey (a.d. 1336), and which is a fine example of the best period in English heraldry. The lion is encircled by a border of the Gothic "pointed ellipse" form, diminishing in width towards the two ends, and bearing the motto—"Christ est mort pour nos peches" in raised letters of an early Roman character. The two pointed ends of the centre are each occupied by an early English form of the Gothic letter B, and the date 1890 is divided between the two ends.

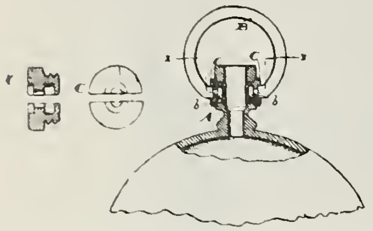


The whole design is produced in repoussée, the "field" of the centre part being perfectly plain, and the border posted. They recently supplied the key for the opening ceremony of the new Wesleyan Schools, Eastwood, by the Mayoress of Keighley.

Some Recent Yankee "Notions."

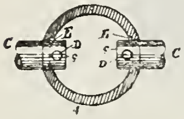
Watch Bow Fastener.—Fritz Mink, Philadelphia, Pa., assignor to the Keystone Watch Case Company of Pennsylvania.

In a watch bow fastener, the combination of a watch pendant provided with apertures in its sides, a bow provided on its ends with enlargements or heads, longitudinally divided sockets fitting said apertures in the pendant adapted to receive the heads of the ends of the bow and provided with integral collars on their outer portions, and fastening devices for fastening said integral collars to the body of the pendant.



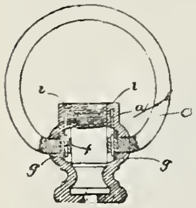
Watch Bow Fastener.—Edward C. Chappatte, Philadelphia, Pa., assignor to the Keystone Watch Case Company, same place.

In a bow fastener, the combination of a watch case pendant provided with holes or sockets on diametrically opposite sides, the inner surface of the pendant being countersunk or recessed about said apertures, a watch bow having its ends inserted through said holes or sockets, and pins or keys extending transversely through the ends of the bow on the inner side of the pendant to lock the bow therein.



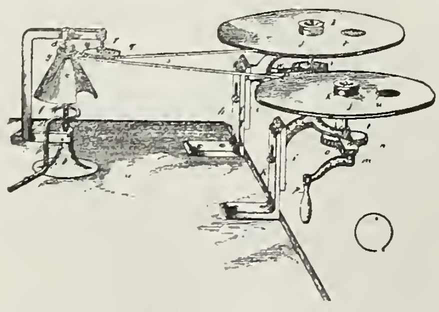
Watch Bow Fastener.—Charles F. Morrill, Boston, Mass.

The combination of a pendant having orifices in its sides to receive the ends of the bow and internal recesses surrounding said orifices, of the bow having its ends projecting into said recesses, independent fastening devices engaged with the ends of the bow within the recesses, and washers held in place in the recesses by said fastening devices.



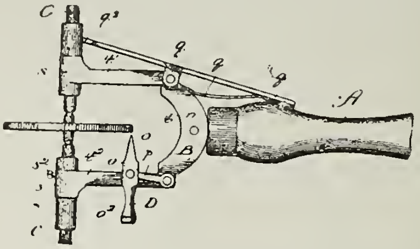
Apparatus for Coloring Watch Springs.—John Logan, Waltham, Mass.

The combination, with a hollow rotary heater having its axis vertical and having a closed upper and open lower end and provided with a cylindrical or pulley-like upper part around which the wire may pass, of a rotary bobbin or reel for drawing the wire around the cylindrical part of the heater, means for rotating the bobbin and heating means located under the open end of the heater.



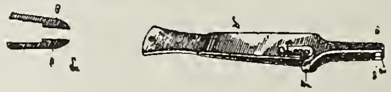
Watchmaker's Truing Tool.—Richard E. Fenner, Chicago, Ill., assignor to the Columbian Novelty Company, same place.

A wheel truing device comprising, in combination, a handle, a frame upon the handle having stationary arms t' t^2, a bearing for the wheel on one arm, a movable jaw piece or bearing for the wheel on the other arm, and an operating lever pivoted upon the frame and connected with the movable jaw piece.



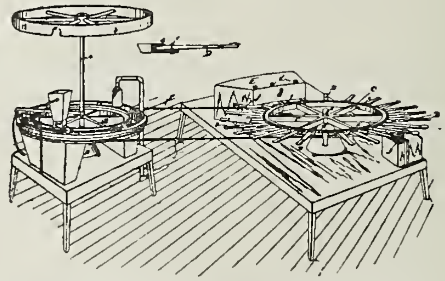
Watchmaker's Tweezers.—Olavus Kolstad, Pleasant Hill, Mo.

A jeweler's tweezers having jaws, *a a*, flattened on their inner faces and rounded on their outer faces, and a transverse groove across the inner face of one jaw at its extreme outer edge.



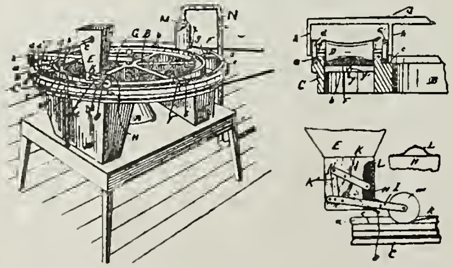
Watch Dial Enamelling and Baking Machine.—Eppa H. Ryon, Aurora, Ill.

The combination of the revolving wheel C, provided with the non-combustible arms D, the furnace E, provided with the opening *f*, and the arm *g*, located above the non-combustible arms D.



Watch Dial Enamelling Machine.—Eppa H. Ryon, Aurora, Ill.

The combination of the wheel B, provided with a ring C, the connecting bars *b*, the vertical flanges *a*, located between the tracks or ways *c*, the tracks or ways *c*, the disks F, and the hopper E.



Random Brieflets.

After the Diamond Rings.—After loitering about the premises of Mr. Thomas Cook, 565, Commercial Road, for some time, one of a gang of half a dozen men—a tall, thin young man, who was standing in the gutter with a parcel rolled in a newspaper under his arm—suddenly hurled it at the window of this shop, in which there was a large quantity of valuable jewelry. Immediately two other men snatched two trays of diamond rings, one being worth £400 and the other £250, and ran down an adjoining street. A son of Mr. Cook rushed out, and attempted to grapple with the men, but they tripped him up, and escaped. A young man crossing from the opposite side of the roadway saw the first man throw the missile, which appears to have been a brick, and chased one of the robbers, but was unable to keep up with him. Twenty years ago a tray of diamond rings valued at £400 was stolen from the same shop.

Grandfathers' Clocks.—A sale at Mr. Ryder's auction rooms in the Strand, the other day, evinced the fact that spoon collecting is not the only "fad," but that the collecting of grandfathers' clocks can be, and is, carried on to a large extent, and when such a collection is made it is a very interesting one. This collection put up for sale spoke of many clockmakers of East Anglia unknown to fame. One clock, dated 1671, was in a solid brass case, and was by the well-known maker, Windmill, London. Amongst the names in East Anglia, were Cumming, of Louth, R. Hall, of Wells, A. M. Hall, of Wells, Nicholls, of Wells, Blowers, of Beccles, Hill, of Walsingham, J. Head, of Burnham, Yeats, of Walsingham, England, of North Petherton, Levick, of Market Rasen.

Remarkable Sale of Coins.—Recently Messrs. Sotheby, Wilkinson, and Hodge, have held a series of sales of coins of different collections, some of them realizing very high prices, and showing an advance in the market value of some of these treasures:—Philip and Mary shillings, £5 7s. 6d.; groat of Richard II., £3 2s. 1d.; while a farthing of the same monarch realized £4 4s; Edward V. groat, £5 7s. 6d. Patterns and proofs of any date realized a good price. In antique coins tetradrachms brought good prices, many bringing between £30 and £40. A number of British gold inscribed pieces were sold at prices varying from £5 to £10. One of Cromwell's pattern sixpences brought £15 10s. The principal buyers were Messrs. Spink, Ready (formerly of the British Museum, now of Rathbone Place, W.), James, Rollin, Verity, and Lincoln.

That Great Statesman, McKinley!—We have heard Cousin Jonathan assert that "McKinley is the greatest statesman on earth"; but, unfortunately, he is not much better informed than the majority of free and enlightened Englishmen. The association of the name of McKinley with the bill was, we believe, purely accidental. When the bill came up to the House of Representatives, his name as chairman of the committee was upon the back of the bill, and, as everything must have a name, so this became known as the McKinley bill!

At the Royal Metrological Society on November 18, Mr. R. H. Scott, F.R.S., read a report of the International Metrological Conference held at Munich from August 26 to September 2nd. On the same occasion Mr. Binnie read a paper upon a new form of electric self-recording rain gauge, constructed upon the assumption that all drops falling from an orifice or tube are identical in weight so long as the dimensions of the orifice are not varied.

The Gold of South Africa.—The output of the Randt for November has again beaten the record, reaching the grand total of 72,793 oz. Preparations are being made for estimating the total productions of the Transvaal; we shall then see how important a part of the world's output South Africa is contributing.

John Harrison Once More.

(Concluded from page 78.)

No wonder, then, that commercial nations set themselves to discover some method whereby the longitude of vessels at sea might be ascertained. Rewards had been offered by other nations. In the sixteenth century Spain offered 100,000 crowns, and Holland 20,000 florins to anyone of any nation who could produce such an invention. In 1714 England offered the immense sum of £20,000. Men of science in all countries strove to obtain the reward, not only for its money value, but also for the honor of having made such a discovery, and for the satisfaction of having saved multitudes from a watery grave. Sir Isaac Newton, Sir Christopher Wren, and others great in the scientific world coveted earnestly and worked diligently for the honor. It was the greatest prize ever offered by any Government for any discovery. But so insuperable were the difficulties that for fourteen years after the reward had been offered not a single inventor presented himself to claim it. That high honor was claimed by John Harrison, a working joiner, of Barrow-upon-Humber.

John Harrison was no doubt a very clever fellow, but he was also a very hard worker. What was necessary, we have seen, was a timekeeper or chronometer which would tell the time accurately in all climates, hot and cold alike, and under all circumstances. It was this, that John Harrison invented. Working at his trade in the daytime, he toiled late at night and early in the morning, he faced difficulties, he battled with what the highest authorities had pronounced to be impossibilities—and he succeeded.

Dr. Smiles tells us that a clergyman who came to the village to preach every Sunday, having heard of the industrious application of the young joiner, lent him a manuscript copy of Professor Saunderson's discourses. Young Harrison copied them out, spending sometimes the greater part of the night writing, or drawing, or calculating.

So difficult was the work which he had set himself to do that the Government reward offered was £10,000 for the discovery of a method of ascertaining the longitude at sea within sixty geographical miles, £15,000 within forty miles, and £20,000 within thirty miles. John Harrison's chronometer kept time so accurately that in a voyage of four months it erred only one minute and 54½ seconds, amounting to but eighteen geographical miles.

Clearly, John Harrison, of Barrow-on-Humber, had merited the great reward!

One would have thought that the prize would immediately have been paid him. But it is evident, from the history of the transaction, that the men of great name and high position in authority did not like to acknowledge that they had been beaten by a humble village joiner. John Harrison received several sums on account, a sufficient acknowledgment of his claim, but it was not until the year 1773, forty-five years after the commencement of his experiments that he received the final balance of the £20,000. He was then eighty years of age, and he died at the age of eighty-three, on March 24, 1776.

It is interesting to know that, while the British Government were so slow to recognise the indisputable claim of John Harrison, the King of Sardinia, "in acknowledgment of his ingenuity, and as some recompense for his time spent for the general good of mankind," ordered four of his chronometers at the price of £1,000 each.

Dr. Smiles ("Men of Invention and Industry") tells us that Henry Harrison, the father of the celebrated John, migrated to Barrow in the year 1700. In our Parish Register there is recorded the burial on June 24, 1728, of "Henry Harrison, clerk, 31 years." If these Henrys be the same person, and there has been no other Henry buried in Barrow, then he must have come here before 1700, for he was apparently appointed parish clerk in 1697. And as it

Rates of Chronometers on Trial for Purchase by the Admiralty, at the Royal Observatory, Greenwich, from July 5th, 1890, to January 24th, 1891.

NAME OF MAKER.	No.	Whether 2 or 8 Days.	Construction of Escapement and Balance, from the Description furnished by the Maker.	ABSTRACT OF THE PRINCIPAL CHANGES OF RATE DURING THE 29 WEEKS.									
				Least Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Greatest Weekly Sum.	Extremes of Temperature.	Mean Temperature.	Difference between the Greatest and Least. (a)	Greatest Difference between one Week and the next. (b)	Mean Temperature for these two Weeks.	Trial No. a + 2 b.
Uhrig	514	2	Uhrig's continually acting auxiliary.	— 1·5	60·0 — 66·5	63·7	+ 6·9	39·3 — 54·2 39·9 — 54·5	47·8 47·4	8·4	2·6	75·4 — 92·1	13·6
Kullberg	5052	2	Reversed detent; short spring.	— 10·3	42·2 — 53·7	47·5	— 3·0	83·2 — 87·8	85·4	7·3	4·3	74·8 — 48·6	15·9
Kullberg	5055	2	Reversed detent; short spring.	— 5·7	95·8 —100·1	98·1	+ 5·3	39·3 — 54·2	47·8	11·0	4·8	85·4 — 64·6	20·6
Uhrig	515	2	Uhrig's continually acting auxiliary.	— 10·7	42·2 — 53·7	47·5	+ 1·2	85·0 — 85·8	85·3	11·9	4·4	74·8 — 48·6	20·7
Usher & Cole.. ..	6507	2	Auxiliary to balance.	+ 3·2	58·9 — 63·6	62·2	+ 17·3	38·0 — 50·6	43·6	14·1	4·7	74·8 — 48·6	23·5
Kullberg	5050	2	Reversed detent; short spring.	— 9·8	42·2 — 53·7	47·5	+ 2·5	85·0 — 85·8	85·3	12·3	7·6	74·8 — 48·6	27·5
Hamilton & Inches ..	$\frac{2}{6570}$	2	Auxiliary to balance.	— 7·5	60·0 — 66·5	63·7	+ 9·7	40·3 — 51·2	45·8	17·2	5·7	98·1 — 85·4	28·6
Isaac	1855	2		+ 3·0	58·9 — 63·6	62·2	+ 19·2	83·2 — 87·8	85·4	16·2	6·2	58·8 — 75·4	28·6
Johannsen & Co. ..	3870	2	Auxiliary acting in heat.	+ 6·0	58·9 — 63·6	62·2	+ 20·4	39·9 — 54·5	47·4	14·4	8·1	74·8 — 48·6	30·6
Haswell & Sons ..	5001	2	Paillard's non-magnetic balance and spring.	— 1·8	91·0 — 93·4	92·1	+ 18·2	34·2 — 48·6	43 1	20·0	5·6	74·8 — 48·6	31·2
Isaac	1856	2		— 6·7	97·5 — 99·8	98·5	+ 14·3	39·3 — 54·2	47·8	21·0	6·0	74·8 — 48·6	33·0
Johannsen & Co. ..	3904	2	Auxiliary acting in heat.	— 11·0	97·5 — 99·8	98·5	+ 4·5	38·0 — 50·6	43·6	15·5	8·9	85·3 — 98·5	33·3
Isaac	1687	2	Lamina auxiliary.	+ 13 9	58·9 — 63·6	62·2	+ 34·3	43·0 — 53·6	48·6	20·4	7·6	74·8 — 48·6	35·6
Hume	2053	2	Auxiliary acting in heat.	— 0·2	74·0 — 75·9	74·8	+ 11·8	43·0 — 53·6	48·6	12·0	12·0	74·8 — 48·6	36·0
Isaac	1789	2	Palladium spring; Isaac's balance.	— 21·7	52·2 — 61·5	57·5	— 2·5	58·9 — 63·6	62·2	19·2	8·8	43·1 — 43·6	36·8
Haswell & Sons ..	5003	2	Paillard's non-magnetic balance and spring.	— 11·2	60·0 — 66·5	63·7	+ 13·8	39·3 — 54·2	47·8	25·0	6·2	75·4 — 92·1	37·4
Kullberg	5054	2	Reversed detent; short spring.	— 19·9	38·0 — 50·6	43·6	— 0·5	64·2 — 68·8	66·2	19·4	9·8	74·8 — 48·6	39·0
Hume	2048	2	Auxiliary acting in heat.	— 12·6	63·7 — 66·0	64·7	+ 2·5	74·3 — 76 3	75·4	15·1	13·3	64·7 — 85·3	41·7
Johannsen & Co. ..	3905	2	Auxiliary acting in heat.	— 5·8	58·9 — 63·6	62·2	+ 9·9	74·3 — 76·3	75·4	15·7	13·5	64·7 — 85·3	42·7
Moore	1818	2	Auxiliary acting in heat.	— 2·7	60·0 — 66·5	63·7	+ 22·7	39·3 — 54·2	47·8	25·4	9·1	58·8 — 75·4	43·6
Whyte & Co... ..	4773	2		— 5·7	97·5 — 99·8	98·5	+ 17·1	74·0 — 75·9	74·8	22·8	11·5	85·4 — 64·6	45·8
Johannsen & Co. ..	3898	2	Auxiliary acting in heat.	+ 1·9	95·8 —100·1	98·1	+ 21·9	52·2 — 61·5	57·5	20·0	13·6	74·8 — 48·6	47·2
Kirk & Co.	$\frac{2}{6572}$	2	Auxiliary to balance.	— 18·4	40·3 — 51·2	45·8	+ 1·7	95·8 —100·1	98·1	20·1	13·7	64·7 — 85·3	47·5
Klean & Co.	1005	2		— 17·4	60·9 — 66·0	64·1	+ 13·6	39·9 — 54·5	47·4	31·0	10·1	64·6 — 64·1	51·2
Glover..	385	2	Ordinary balance with gridiron auxiliary.	— 7·7	60·0 — 66·5 64·2 — 68·8	63·7 66·2	+ 16·2	90·0 — 93·2	91·4	23·9	14·6	74·8 — 48·6	53·1
Pyott	860	2	Auxiliary compensation.	+ 11·9	58·9 — 63·6	62·2	+ 30·1	74·3 — 76·3	75·4	18·2	17·5	58·8 — 75·4	53·2
Hume	2050	2	Auxiliary acting in heat.	— 16·4	83·2 — 87·8	85·4	+ 6·4	40·3 — 51·2	45·8	22·8	15·8	74·8 — 48·6	54·4
Keys	984	2	Ordinary balance, with additions.	+ 14·0	97·5 — 99·8	98·5	+ 39·8	54·3 — 65·8	58·8	25·8	15·0	58·8 — 75·4	55·8
Kendal & Dent ..	1780	2	Auxiliary to balance; bright spring; reversed detent.	— 43·2	43·0 — 53·6	48·6	— 16·7	60·0 — 66·5	63·7	26·5	15·1	85·3 — 98·5	56·7
Robinson & Wells ..	2971	2	Auxiliary compensation.	— 9·9	60·0 — 66·5	63·7	+ 25·0	38·0 — 50·6	43·6	34·9	11·5	74·8 — 48·6	57·9
Moore	1811	2	Auxiliary acting in heat.	— 6·0	74·3 — 76 3	75·4	+ 20·5	54·8 — 61·4	58·0	26·5	18·4	64·7 — 85·3	63·3
Russell	2324	2		— 2·0	97·5 — 99·8	98·5	+ 26·5	74·3 — 76·3	75·4	28·5	17·7	74·8 — 48·6	63·9
J. Poole & Co. ..	5870	2	Poole's auxiliary to balance.	— 39·9	34·2 — 48·6	43·1	— 6·1	60·0 — 66·5	63·7	33·8	18·3	74·8 — 48·6	70·4
Pyott	916	2	Ordinary balance with auxiliary.	+ 9·3	95·8 —100·1	98·1	+ 53·1	39·3 — 54·2	47·8	43·8	16·6	98·5 — 98·1	77·0
Robinson & Wells ..	2847	2	Auxiliary compensation.	+ 3·2	60·0 — 66·5	63·7	+ 35·3	54·0 — 61·8	58·6	32·1	22·5	74·8 — 48·6	77·1
J. Poole & Co. ..	5812	2	Poole's auxiliary to balance.	— 36·4	34·2 — 48·6	43·1	— 1·6	74·3 — 76·3	75·4	34·8	25·5	74·8 — 48·6	85·8
Keys	924	2		— 2·5	58·9 — 63·6	62·2	+ 35·7	74·3 — 76·3	75·4	38·2	25·0	64·7 — 85·3	88·2
Glover..	366	2	Ordinary balance, with auxiliary acting in cold.	— 21·5	74·0 — 75·9	74·8	+ 37·4	39·9 — 5·45	47·4	58·9	22·8	58·8 — 75·4	104·5

The sign + indicates that the rate is gaining.

The Chronometers are placed in order of merit, their respective positions being determined by consideration of the irregularities of rate exhibited in the Table above. The Trial No. *a* + 2*b* is taken as a measure of the irregularities of rate.

Rates of Deck Watches on Trial for Purchase by the Admiralty at the Royal Observatory, Greenwich, from October 25th, 1890, to February 14th, 1891.

ABSTRACT OF THE PRINCIPAL CHANGES OF RATE.

NAME OF MAKER.	No.	Difference between greatest and least Weekly Rates. Dial up. a	Greatest difference between one week and the next. Dial up. b	Difference of Weekly Rates. Pendant up —Dial up. c	Pendant right —Dial up. d	Pendant left —Dial up. e	Trial Number. $a + 2b + \frac{1}{2}(c + \frac{d+e}{3})$
		s.	s.	s.	s.	s.	
Brockbank and Atkins..	261	21·2	5·2	− 8·3	− 1·6	− 2·0	36·4
Usher and Cole	25262	15·5	12·7	− 9·1	+ 33·8	− 1·9	51·5
Bannister and Son	1711	18·5	12·8	− 7·7	− 3·1	− 42·8	55·6
Isaac	10827	20·1	14·0	− 17·6	+ 5·1	+ 4·4	58·5
Usher and Cole	25507	23·3	16·6	+ 16·3	+ 28·1	+ 17·2	72·3
Spiegelhalter and Son	3650	38·7	15·5	+ 7·7	+ 3·2	+ 14·2	76·5
Ashley	3922	29·8	15·9	+ 12·1	− 26·6	+ 31·8	77·4
Hall	2761	25·4	22·0	+ 9·3	− 27·8	− 26·4	83·1
Isaac	10834	24·5	21·1	+ 30·6	+ 27·8	+ 4·9	87·5
Player	25455	29·3	19·6	+ 0·7	+ 53·4	+ 61·4	87·9
C. Frodsham	07953	47·3	12·3	+ 36·6	− 5·5	+ 11·3	93·0
Spiegelhalter and Son	3005	27·7	26·5	+ 32·1	− 2·9	− 1·7	97·6
C. Frodsham	07463	31·5	22·9	− 23·7	− 23·4	− 33·6	98·7
Brockbank and Atkins	74263	40·6	24·7	+ 6 9	+ 16·8	+ 19·6	99·6
Brockbank and Atkins..	74264	32·2	23·4	+ 37·7	+ 11·5	+ 1·7	100·1
Hall	2760	23·6	12·6	+ 37·7	− 103·7	− 91·1	100·2
Buckney	30201	33·2	16·7	− 47·2	− 27·0	− 40·8	101·5
Isaac	10826	33·0	23·2	− 39·5	− 23·9	− 22·3	106·9
Isaac	10832	25·7	12·4	+ 101·8	+ 28·6	− 18·7	109·3
Brockbank and Atkins..	74262	21·3	20·8	+ 40·7	− 116·6	− 41·7	109·7
Buckney	30400	42·8	30·5	− 8·9	− 2·6	+ 21·6	112·3
Bannister and Son	1710	50·6	18·8	+ 31·3	+ 28·5	+ 58·2	118·4
Kendal and Dent	17294	28·4	15·0	+ 113·7	+ 46·2	+ 41·7	131·4
Ashley	3628	50·6	41·3	− 0·6	− 4·4	+ 3·0	134·7
Hammersley	$\frac{1}{4014}$	64·7	21·9	+ 45·7	− 26·7	− 28·1	140·5
J. Poole and Co.	6498	51·1	51·1	+ 19·0	− 11·3	− 11·6	166·6
Isaac	10830	72·0	49·8	− 9·0	− 74·8	− 92·5	204·0
Kendal and Dent	12511	69·4	69·4	+ 29·0	− 9·7	− 40·5	231·1
Kendal and Dent	25450	74·0	74·0	+ 2·8	− 69·8	− 54·2	244·1
Player	25454	93·1	78·9	+ 67·6	+ 70·3	+ 46·5	304·2
J. Poole and Co.	6566	191·5	146·5	− 6·5	− 60 8	− 90·9	513·1

Usher and Cole, 25262.—The mainspring of this watch was found broken in the 10th week of the trial. Its position in the list, having been determined without reference to the duration of the trial, is not necessarily correct.

Player, 25454.—The mainspring of this watch was found broken in the 11th week of the trial, after the trials in position and heat. Its position in the list, having been determined without reference to the duration of the trial, is not necessarily correct.

(Continued from page 143.)

is scarcely likely that he would obtain such an appointment in the first year of his residence in the parish, John must have been quite a baby when he was brought here by his parents, and there is just the possibility that the great longitudinarian may, after all, have been a native of Barrow.

On the north side of Christ Church, Hampstead, there is a tombstone erected in his memory, on which is the following inscription :—

"In Memory of Mr. John Harrison, late of Red Lion Square, London, Inventor of the Timekeeper for ascertaining the Longitude at sea. He was born at Foulby, in the Co. of York, and was the son of a builder of that place, who brought him up to the same profession. Before he attained the age of twenty-one, he, without any instruments, employed himself in cleaning and repairing clocks and watches, and made a few of the former chiefly of wood. At the age of twenty-one he employed his whole time in chronometrical improvements. He was the inventor of the Gridiron pendulum and the method of preventing the effect of heat and cold upon timekeepers by two bars of different metals fixed together. He introduced the Secondary Spring to keep them going while winding up, and was the inventor of most (or all) of the improvements in clocks and watches during his time.

"In the year 1735 his first timekeeper was sent to Lisbon, and in 1764 his then much improved fourth timekeeper having been sent to Barbadoes, the Commissioners of Longitude certified that it had determined the longitude within one-third of half a degree of a great circle, having erred not more than 40 seconds in time.

"After sixty years close application to the above pursuits, he departed this life on the 24th day of March, 1776. Aged 83.

"Mrs. Elizabeth Harrison, wife of the above Mr. John Harrison, departed this life March 5, 1772. Aged 72."

On the upper part of the tombstone is inscribed :—

"Reconstructed at the expense of the Worshipful Company of Clockmakers of the City of London, 1879. William Parker, Master."

It will be seen that if Henry Harrison came to Barrow in 1700, John would be a boy of seven years old at that time.

John Harrison had a brother James, who, it has been said, was the cleverer of the two.

It has been asserted that the claims of James to the

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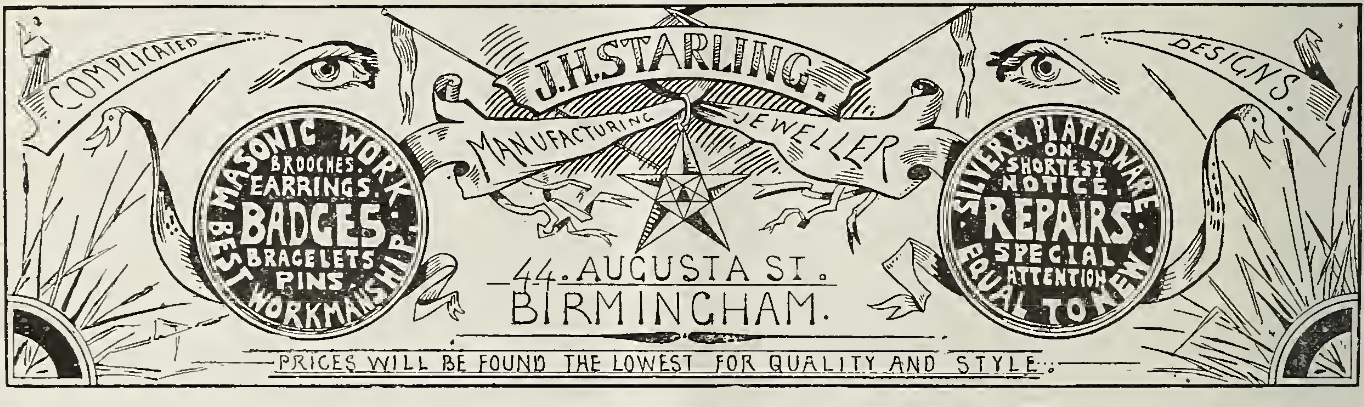
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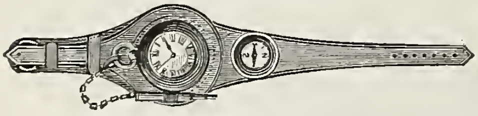

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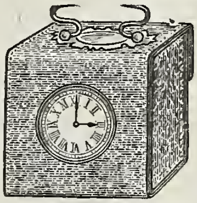

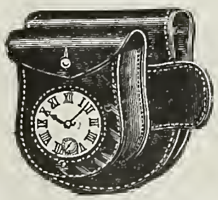

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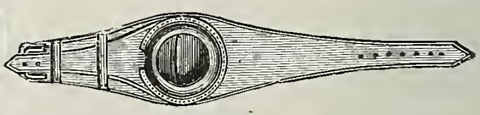

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SPECIMEN TESTIMONIAL.

"High Street, Wendover, Bucks. January 13th, 1891.

"DEAR SIRS,—The billheads duly received. Pass my expectations both as regards style and quality, while the price is indeed very moderate.

"J. T. BROWN, Watchmaker.

Catalogue of Blocks, crown 4to., 44 pp., price 4d., post free fame of the discovery of the Marine Chronometer were equal to those of John, but that John was the more pushing of the two, and that by keeping himself in the front he succeeded in obtaining the celebrity and the reward which, partly at least, belonged to James.

Canon Machell has given me a paper which was written by the late Mr. W. S. Heselden, of Barton, in 1828, which, on account of its authorship deserves attention. It reads at follows :—

" John and James Harrison were brothers, and carpenters at Barrow, in the county of Lincoln, ingenious men [who] set to work together in the construction of a timepiece on a new principle, and with the intention of obtaining the promised reward for the discovery of the longitude. James was the greater genius of the two, and from his conceptions the timekeeper was modeled and completed; but being the more careless and easy of the two, as to disposition and habits, he allowed his brother to take the machine up to London.

" As was anticipated by their neighbours he introduced it as his own sole invention, and not only obtained the full credit for it himself, but also laid the foundation for his family, obtaining the £20,000 reward, which after much trouble and exertion was finally and fully paid to him.

" Poor James in the interim obtained no share either in the renown which was heaped upon his brother for his discovery, nor any of the reward which was paid by the Government. The only acknowledgement James or his family ever received was the free grant to them of the house in which they were born, being the cottage on the left-hand side of the road as you enter Barrow [from Barton] and having been sold by James's family is now the property of Mr. Smith his Father late brewer there.

" These particulars were given to me by the present James Harrison, who always considered his grandfather as the dupe of his more cunning brother as to the management of their many concerns.

(Signed) W. S. Heselden, 1828."

In estimating these remarks we must remember that this document was written more than sixty years after the death of James. It is quite natural that James in their earlier days should have assisted his brother John in his work and studies, and might reasonably have expected some remuneration for his labors when John obtained the reward. And there is no evidence to prove that he was not remembered and rewarded by John. But when the final payment was made, James had been dead ten years, and the document of Mr. Heselden shows that he had not altogether forgotten his brother James.

During the many years in which John was toiling in London, and battling with the Board of Longitude and growing in personal fame, James had the opportunity of asserting his claims, if he felt that he had any. We can understand that when John was growing famous and comparatively rich in London his brother might be envious, and that village gossip might fan the flame of jealousy in the mind of James. But we have no reason to accept the dictum of a document written so long after, and to think that James was the dupe of John, or that John in any way injured James. We prefer to think that John Harrison was as honorable, as he was confessedly industrious.

While John was at work in London, James appears as a Bell Founder, both in Barrow and in Barton. The Foundry in Barrow was near the Hall gates just within the outer fence where the gardener's cottage now stands. James, the grandson of the earlier James, had a Bell Foundry at Barton in 1826. A great-grandson of " Longitude Harrison," himself a John Harrison, is now living in Hull. The family appears to be extinct in Barrow. The only visible remains are in the sundial aforesaid, and the name which appears on church bells in various places. I met with it at Masham, in Yorkshire, where the six bells bear the inscription, " John Harrison, Bell Founder, 1766." The bells also of Sutton Church, near Hull, were made by James Harrison.

" Seest thou a man that is diligent in his business, he shall stand before kings, he shall not stand before mean men." John Harrison actually did " stand before " George III.

Gazette.

Bankruptcy Record.

Dickinson, William Richard, 20, Manchester Road, Burnley, and Dickinson, Charles George, 19, Carr Road, and 26, Manchester Road, Nelson, formerly trading as W. and C. Dickinson, 20, Manchester Road, Burnley, and 26, Manchester Road, Nelson, Watchmakers, Gold and Silver smiths, and Jewelers. First Meeting: Dec. 17. Public Examination : Court House, Burnley, Jan. 7.

Grayson, F. (Grayson, B., and Son), 16, Garden Street, and 19, Havelock Street, Sheffield, Electro-Plate Manufacturer.

List of Creditors—

		£	s.	d.
Wood, W., and Co.	Burslem	10	12	4
Dodworth, M., and Son	Sheffield	13	11	9
Dodworth, M. (Trustees of)	,,	1,294	15	3
Gladwin, B.	,,	13	14	10
Ryland, Limited	,,	88	6	8
Tucker, G., and Co.	,,	34	3	3
Ridgeways, —	Stoke-on-Trent	42	11	2
Castry and Gee	Stourbridge	20	13	2
Brownhills Pottery Co.	Tunstall	12	1	2

(Total estimated amount—£1,630 19s. 9d.)

Fully Secured Creditors.

		£	s.	d.
Beardshaws, — (Exors. of)	Sheffield	2,717	9	9

(Estimated value of security, £8,850.)

Partly Secured Creditors.

	£	s.	d.
Bankers' Claims	133	2	9

(Estimated value of security, £100.)

	£	s.	d.
Preferential Creditors	12	6	5

Isaacs, E., and Wulfson, A. (English Optic Co.), 35, Hatton Garden, London, Opticians.

List of Creditors—

		£	s.	d.
Isaacs, L., and Co.	London	40	0	0
Laurent, —	,,	54	0	0
Nitsche and Gunter	,,	58	0	0
Rackow, H.	,,	98	0	0
De Woolfson, J. G.	,,	100	0	0
Aston, T.	Birmingham	29	0	0
Davis, O.	,,	49	7	11
Guillaume, J.	Jura	20	0	0
Prost, Z.	La Rousses	180	0	0
Cohn, H.	Morez	48	16	0
Jauvier, —	,,	48	0	0
Touriner, E.	,,	30	0	0
Courlander, N.	Richmond	145	0	0

(Total estimated amount - £944 4s. 7d.)

	£	s.	d.
Liabilities on bills	193	3	0

(Of which £41 6s. 6d. is expected to rank.)

	£	s.	d.
Preferential Creditor	15	0	0

Kleizer, Anthony, 55, Oxford Road, Reading, Berks, Watch and Clock Maker. First Meeting: Dec. 21. Public Examination : Assize Courts, Reading, Jan. 14, 1892.

Moulson, F., late Jeweler, Tenby Street, North, now 5, Belgrave Street, Birmingham.

List of Creditors—

		£	s.	d.
Girod Bros.	Birmingham	40	0	0
Moulson, M. E.	,,	150	0	0
Randle, --	,,	10	17	6
Twine, —	,,	19	5	0
Westwood, —...	,,	13	8	0

Strawbaum, Maurice, 14, Reservoir Retreat, Reservoir Road, and 33, Tenby Street, Birmingham, Jeweler.

List of Creditors—

		£	s.	d.
Moyer and Fulda	London	82	9	0
Appleby, A., and Co....	Birmingham	225	7	3
Westwood, C., and Sons	,,	120	6	9
Kemp, A., and Son	,,	30	10	2
Levy, D.	,,	68	8	6
Lyon, S.	,,	22	0	0
Hawley and Son	Coventry	20	9	0

Taffinder, Frank, 40, High Street, Rotherham, York, Watchmaker and Jeweler. Adjudication: Nov. 26. First Meeting: Dec. 23. Public Examination: County Court, Sheffield, Jan. 7.

Notices to Creditors.

Hettish, Gordon, 14, Magdalen Street, Exeter, Watchmaker and Jeweler. First and final dividend of 3s. 4d.

Gardner, William Henry Buckby, 5, Russell Terrace, Old Allesby Road, Coventry, Watch Manufacturer. Supplementary dividend of 1¼d.

Partnerships Dissolved.

Richardson, William, and Sons, 56, South Bridge, Edinburgh, Silversmiths and Silver-Plate Merchants. Nov. 24. Debts by William Imrie Richardson, who continues under the same style.

Priestley and Shaw, 4, Carver Lane, Sheffield, Silver and Electro-Plate Manufacturers. Nov. 24. Debts by Arthur Priestley, who continues on his own account.

Phillips, Henry (Henry Phillips and George Frederick Phillips), 24, Great Hampton Street, Birmingham, Jewelers. Debts by G. F. Phillips, who continues under the same style.

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LETTERS TO THE EDITOR.

THE CERTIFICATE OF THE BRITISH HOROLOGICAL INSTITUTE.

To the Editor of The Watchmaker, Jeweler and Silversmith.

Sir,—I send you quotations from a bill (the original of which I have enclosed) circulated by an individual who advertises himself as the holder of the certificate of the above institution, and attaches the letters M.B.H.I. to his name. This certificate is supposed to be a guarantee that the holder is a qualified workman, but everyone who knows what work is, knows also that no workman worthy of the name in a small degree would stoop to contract on such terms, for there can be no other outcome than "scamping," and a system of "scamping." A genuine certificate is an excellent and desirable thing, but, like every good thing, when it is abused it becomes an equal power for mischief. If a practical examination were connected with the technical examination of the City and Guilds of London Institute, on the lines on which that Institution conducts practical examinations in other subjects, such a test could be made an efficient one and would guarantee the competency of the holder.

The following are extracts from the bill referred to:—

Founded 1858.

This certifies that S— W— has passed a watch-repairing examination of the British Horological Institute, and has a good knowledge of depths, the verge, horizontal and lever escapements, and keyless mechanism, with corresponding practical ability.

Grimthorp, *President.*
D. Buckney, *Chairman of the Council.*
F. J. Britton, *Secretary.*

PRICE LIST.

	£	s.	d.
Balance-staff and cleaned	0	3	6
Cylinder and cleaned	0	3	6
Geneva watch cleaned	0	1	0
Lever watches cleaned	0	1	6
A Single Watch at Wholesale Price.			
Ladies' silver Geneva Watches...	0	12	0
English Lever Watches	2	0	0

Extract from local press:—"The certificate alluded to has been granted to Mr. W— by the British Horological Institute, which certifies the holder of it to be practical and competent in all the branches of watchmaking and repairing. We understand it is the only certificate of this kind granted in B—."

Surely, sir, there will be great differences of opinion as to the value of this certificate in the face of the accompanying facts.—I am, sir, your obedient servant,

J. Herrmann.

Readers will fully appreciate the importance of the questions raised by our esteemed correspondent. Mr. Herrmann is too widely known throughout the Trade to require any introduction. Oddly enough, in looking over this week's *Hospital Gazette*, we find a similar wail going up from a doctor who says an M.D. and L.R.C.S., with numerous other qualifications, all of which ought to command at least two guineas a visit, has opened a place close by him, where he cheaply and nastily advertises his highly-qualified "advice and medicine, sixpence." That this man is all he claims to be is easily proved by reference to the register, and although it is extremely humiliating, both to himself and the profession, neither the hospitals where he gained his instruction, nor his examiners, can feel responsible for the use to which he puts his talents after those bodies have ceased their connection with him. Nor do we see that the Horological Institute can do anything in the matter mentioned by Mr. Herrmann. Doubtless every member of the institute is disgusted and humiliated by such an advertisement, but they can do no more in such a case than could the committee of the City and Guilds Institute. There is, however, no denying that advertising such prices as those alluded to must have a baneful effect upon the Trade at large, which is the very opposite of the function of the Horological Institute; and the Institute should be able to prevent any man who carries on practices detrimental to the Trade giving weight to such practices by the use of "M.B.H.I." after his name.—Ed.

ANSWERS TO CORRESPONDENTS.

Old Troy.—The man who says the Weights and Measures Act of 1878 has anything to do with penny weights in connection with gold, save that it rendered them illegal, does not know what he is talking about. Sec. 20 states that "All articles sold by weight shall be sold by Avoirdupois Weight; except that gold, silver, platinum, diamonds, and other precious stones, which may be sold by the ounce Troy, *or decimal parts of such ounce*, and all such contracts, bargains, sales and dealings in relation thereto shall be deemed to be made and had by such weight, and when so made shall be valid.

Specs.—We should advise you to send to Messrs. Churchill, New Burlington Street, W., for their catalogue, which will give you a list of books suitable for the purpose you require.

The Watchmaker, Jeweler and Silversmith.

EDITED BY W. J. LEWIS ABBOTT, F.G.S.

Entered at Stationers' Hall.] [*Registered for Transmission Abroad.*

VOL. XVII.—No. 8.] FEBRUARY 1, 1892. [Subscription, 5s. per Annum. Post Free. Single Copies, 6d.

The Death of the Duke of Clarence.

AT first thought the death of a Prince might not appear a proper subject for a trade journal. Nor, indeed, could its claims be legitimately maintained by most journals, whose limited province is matters which concern a special industry. But the fact is, the jewelry trade in many respects is quite different from every other. It matters but little what the ideas in the past have been concerning gems:—thus in Burton's "Anatomy of Melancholy" Renodeus admires precious stones because they adorn king's crowns, grace the fingers, enrich our household stuff, defend us from enchantments, preserve health, cure diseases, drive away grief and cares, and exhilarate the mind. But no admirer of gems to-day would dare to advance the six latter claims, although it was for these and similar virtues that they were formerly so esteemed; and perhaps there is only a smattering of truth in what Bacon said of them, "Many things operate upon the spirits of man by secret sympathy and antipathy," or we may even scorn De Boot, who says, "In good sooth I am fain to confess that supernatural effects are after this fashion, God having permitted that it should be so. But, as I have already said, this is done by evil spirits, who take up their abode in the substance of the precious stones."

But whatever the history of the past, jewels have long been recognised as the emblem of affluence and position, so that the trade has naturally become more or less associated and identified with the heads of society; and the life, actions, and caprices of the leaders of fashion, not only materially influence, but may make or blight an industry, which to-day is represented by hundreds of millions sterling. No other trade lies so much at the mercy of its autocratic heads—a mere objectless whim, fancy or caprice, may transform the value of a lump of clay under certain conditions into a nation's ransom; and to obey the dictates of fashion many an otherwise pure and unsullied nature will stoop to the lowest, meanest, and most horrible crimes!

With almost every other commodity in life, "time and materials" form an extremely important element; but with the gems of the hour these are altogether ignored—their value is, indeed, what they will bring, and this is directly proportional to the patronage bestowed upon them by the despots of the world we call fashion. That it is not associated with any particular beauty or rarity becomes evident from the fact that an absolutely colorless diamond may be far less brilliant than one that draws a little color, compared with whose fiery splendor it may be cold and lifeless, yet fashion decrees that "white" is the herald of wealth! Nor, indeed, can it be rarity, for there are numerous things more rare than white diamonds—however, the leaders decree and all obey!

We are therefore led to realize what important positions in life are those held by the directors of fashion. We know that there are many who, in looking back upon the natural history of chiefs and kings—seeing the important positions they occupied in bygone days, when the chief occupation of every band of human beings was waring with its fellows—are inclined to regard them more as disused structures and relics of days that have past, than as any organic part of the life of to-day. But whatever may be one's ideas of the Divine Right of Kings, all must admit that the present state of society was not the work of a minute; and it is a well-known law of evolution that structures must modify with the change of environment if they survive; and so it comes to pass that with the alterations in society the office and function of those at the head of a nation must necessarily alter too. But so long as there are those to govern who are intellectually behind ourselves, at least so long will it be necessary to have a titular head of the nation; and although he may not lead us forth sword in hand, example may be mightier than the sword. Seeing, then, that it is our fortune to be so associated with the highest positions in the nation, in all the grandeur of their displays, flattered as we are by the fact that our productions are made the mouthpieces of their greatness, can we possibly grow fat on their magnificence and prosperity without feeling their reverses? If we think so, no better argument could be adduced to the contrary than that offered by the melancholy death of the one who might have been our future king—he to whom all eyes were directed, after a year beset with natural adversities. He was the sun just rising over our horizon that was to lighten and cheer us. From the midst of our city, from the far ends of our possessions, money was being got together, the major part of which would have passed through the hands of our trade. Conscious of these facts, the whole industry was bestirring itself; many magnificent specimens of modern art were being projected; in many cases thousands of pounds were being put into various kinds of gem ornaments, and in several others orders amounting to many thousands of pounds were actually given. But by a fell reversion of what appeared a law of nature, the rising sun sank back, leaving, indeed, behind it "a darkness that could be felt." The offspring of our hope is gone, and instead of the subjective business which would have had its origin in the actions of her who might have been our future Queen, all jewelry is banished from sight, and is not to be thought of for an indefinite period, during which time we cannot but ask: What is to be done with trade?

The Montana Sapphires and Rubies.

MESSRS. STREETER AND MALLABY-DEELEY have returned from their prospecting on the banks of the Missouri, and, as might be expected, have come back, like the Queen of Sheba, to find even greater wonders than have been told. Their report is most interesting, and to those who, like ourselves, have watched the history of this locality is also most puzzling. Firstly, we cannot understand why the obtaining of the services of Mr. Yerrington as an independent expert, with a character from American jewelers, is treated as such a happy accident, considering Mr. Y.'s name in connection with this property. Nor can we see on what grounds they so firmly believe they have the monopoly of the gem-bearing lands, seeing that the report admits they "probably cover ten square miles." This leads us to ask the question why this particular spot in Montana is called "mines"? When the gravel and clay banks of the Thames, upon which some of our villages are built, and which carry mammalian remains, can be called "bone-caves," then can we call the similar deposits of the Missouri, "*gem-mines*." We should also like to know what kind of "sapphires" are the 20,000 carats quoted, 75 per cent of which is said to be "imperfectly crystallized corundums." We should like to know how a *sapphire* can be imperfectly crystallized corundum.

How much more delighted we should have been if the travellers had been able to bring back specimens of the true color sapphire or ruby, instead of which one of the directors is reported by an American Jewelers' paper to admit that they had not found a true color sapphire.

When a certain gentleman was trying to form a company to work these Montana deposits he was showing a piece of what was said to be the matrix of these gems. It was a dull grey trachyte carrying corundum. Now we are told that the matrix is a mica-trap, and we are anxious to know which is right. In these reports, too, the gold element is brought very much to the front, and very cleverly put, for it looks as if the deposit was going to yield 3½ oz. of the precious metal to the ton. But when we examine more closely the facts are altogether different. It appears that resting upon the bed rock there is a layer measured by inches, which, when ten tons are concentrated down to one ton, yields 3½ ozs., or in other words about 3 dwt. to the ton, a quantity in which we fail to realise a fortune when perhaps scores or even hundreds of feet of stuff have to be removed to get at it. We have received further communications from those we believe know the most about these deposits, and we are extremely sorry to say we are by no means so sanguine as those who have drawn up the reports.

What Birmingham is Doing for her Chicks.

THE Committee of the Jewelers' Technical School have issued a special circular, giving details of the prizes open for competition among the students. The total amount is nearly thirty pounds, and opportunities are given to almost every section of work, both making and ornamentation. The following are the prizes for 1891-2:—

Jewelers' Association Prizes.—£2 10s. for the best wrought and decorative form, suitable for lid of jewel or presentation casket; £2 10s. for the best circular plaque, in repoussée; £2 10s. for the best engraved panel or plaque.

Mr. Fridlander's Prizes.—£2 for the best constructed piece in two planes; £1 for the second; 10s. for the third best piece. £1 for the best constructed model of insect or butterfly; 10s. for the second best specimen. £5, attendance prizes, for students in technical school, in amounts to be decided by the committee.

Mr. H. Davis's Prizes.—£1 1s. for the best repoussée panel; 10s. 6d. for the second best panel. £1 1s. for the best engraved plate; 10s. 6d. for the second best specimen. £1 1s. for the best enamelled plate, cloisonné or champ levé; 10s. 6d. for the second best example; 10s. 6d. for the best enamelled plate.

Mr. B. J. Round's Prize.—£2 2s. for the best watch-case, decorated in cloisonné enamel.

Prizes offered by the Operative Jewelers' Trade Society.—£1 1s. for the best surface chasing of casting of an organic form; 15s. for the second best example; 6s. for the third example.

In reference to the Jewelers' Art School in Vittoria Street, we might call special attention to the fact that "*all* young persons of *both sexes* are eligible, whether employed in offices or workshops." Further, we are not quite sure if the proper relations of the Art and Technical Schools are fully understood. Let us explain, therefore, that the Jewelers' Art School is a branch of the Birmingham Municipal School of Art, the management resting principally with the City School of Art Committee, although the Committee of the Jewelers' Association have a certain share in its management. It is essentially a municipal and not a local institution.

The technical classes, however, are an extension of the School of Art idea, and are entirely under the control of the Jewelers' Association, being carried on in separate rooms, rented for the purpose from the City authorities. These rooms are well fitted up with the necessary tools and apparatus for carrying on the work of jewelry making, the whole plant belonging to, and the teachers being provided by, the Trade Association. It is in this idea of real technical instruction, as distinct from mere art culture, that the chief interest of the experiment rests. It is at present the first and only attempt in Birmingham on the part of any trade to provide such instruction for its learners. In the technical classes during the present term, students will be prepared for the Technological Examinations of the City and Guilds of London Institute to be held in May next. The fact of having passed these examinations will undoubtedly be of immense advantage to the future workmen. In the course of a little while employers will learn to look for, and to appreciate, these signs of culture when engaging workmen. We trust our Birmingham artisans will be ready to avail themselves of the opportunities for study thus offered.

Determinative Gemmology.

THE PLEOCHROISM OF GEMS.

By the Editor.

(*Continued from page* 129.)

The Monochroism of the Spinel.

In our last article we observed that upon placing our eye to the eye-piece we saw not one image of the square aperture, but two. Turning the eye-piece round we see one of these rays behaving in an ordinary manner and remains practically still, but the other behaves in an extraordinary manner and revolves round its fellow. These we will call the *ordinary* and *extraordinary* rays respectively. In this revolution the rays are twice horizontal, twice vertical, and four times diagonal (and necessarily at every other angle in relation to a circle, once). We now place the edge of the spinel in the wax, which holds it firmly. Looking through the eye-piece it is not quite so clear and defined as it might be, so we draw out the tube a little, and focus it up till we can see every defect in the stone. Both the squares are now of the same uniform hue, very similar to the appearance of the gem to the naked eye when held up to the light. It is true there is a little fringe of color towards the edge, but of that we need take no notice now, although we shall have more to say about it later on; practically they are both exactly of the same red hue, nor does the turn of the eye-piece and the causing of the two rays to revolve round each other produce any visible change of hue. Some facets, it is true, are far more illuminated in certain positions than others, but for all that the hue remains practically constant. If we move the milled head F so as to turn the stone upon its axis, there is no further alteration of the hue. We have now looked through the stone in every position in the direction of two of its axes; so that if we take it off the wax, and turn it round 90° along the girdle, and stick it on again and repeat the operation, we shall have looked through the stone in every possible direction, if we further revolve the stage (C round B); but still find this absolute *monochroism*, we should know it is not a ruby.

The Dichroism of the Ruby.

Seeing that the above spinel was monochroic (in other words, that turning it in any direction, and viewing it through every axis we fail to get a second color), let us look at the ruby alluded to already. Placing it by its girdle in the wax, and viewing it at a slight angle to the table, we are struck at a glance by the entire dissimilarity of aspect compared with the spinel. Instead of that bright glassy hard monochroic picture we notice a rich softness of hues, one square being a rich soft aurora red, the other far more violet in appearance, a hue which we should term a carmine red. We are thus introduced to the phenomena of dichroism, or the exhibition of two squares of different hues, which are spoken of as the twin colors, or twin hues. The twin colors of a fine "pigeon's blood" ruby, then, are aurora red and carmine red. Replacing this ruby by another, which "draws" a little more, but is nevertheless a very fine stone, we are surprised to find that one square has almost lost its claim to red, becoming a dirty pinkish straw, and the other has become correspondingly darker, being in fact almost a pure mauve.

During the whole of these operations the indicator of the eye-piece A has stood at zero of the scale on B, which means that the two squares have stood horizontally. Upon rotating the eye-piece, we find that the squares revolve round each other, exactly the same as they did when we placed the spinel upon the stage-arm; but we notice a great difference, however, for as the two rays revolve round each other they change colors, the aurora becomes carmine, and *vice versa*, twice during each revolution. Now a little consideration will show that as each square alters its hue, and passes into that of its companion four times during a revolution, it is clear that there are four positions where each square will be a mixture of half-and-half of each hue, as it were, so that both squares will then be the same hue, and will in fact be monochroic. It therefore follows that it is absolutely necessary to revolve the eye-piece when we see the two squares of the same hue, before we can say for a positive fact that the gem is monochroic.

There is yet another set of motions to be dealt with. Starting with the prism at zero, we see one square aurora, and the other carmine red; but if we turn the stage bodily (C upon D) we see a similarity of alternate changing of colors, and concomitant monochroism four times in each revolution. Let us imagine the twin colors standing parallel, when the stage-arm carrying the gems stand also at zero or parallel to the square. Upon turning the stage to 45 degrees with the squares, dichroism is no longer presented but absolute monochroism.

I have several times seen men who pose as experts take up a fine ruby in the corn-tongs and place it in this last-named position over the square. Then, because they got monochroism, they have immediately dropped the gem and pronounced it a spinel! It is these facts, amongst others, that have led me to make the improvements in the instrument.

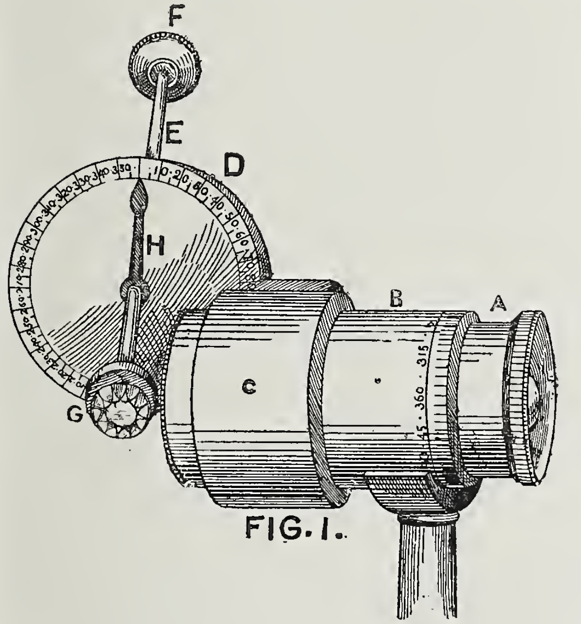

FIG. 1.

So far, then, we have seen that certain gems are monochroic, *i.e.*, that they exhibit practically one hue, and that others exhibit two or more hues (when they are known as *dichroic* and *pleochroic* respectively). We have also seen that, great as these distinguishing characteristics are, they can be emphasised and critically tested by the use of the dichroscope. By-and-bye, when we have been educated by the use of this invaluable little instrument, we shall often be able to discern dichroism without it. It would, perhaps, be a very great difficulty to make the trade realise the importance of this, even so far as we have already gone; but when we remember that the spinel was never separated from the ruby till the time of Romily de Lisle (so that most of the "historic rubies" are probably spinels) its value must force itself upon one. Several of the "historic rubies" that were sold at the last sale of the French Court Jewels were only spinels; and I have also seen some "historic" Indian "rubies" that are not corundum at all.

But before we can understand these phenomena, or employ them intellectually or successfully, it is necessary that we should understand their *raison d'être*, and the nature of the laws by which they operate. In the months of August and September, 1890, we alluded to the optical laws, in virtue of which these phenomena exist; but as we have since then considerably increased our subscription list, it may be as well to disregard a little repetition, in order that all our readers should more fully understand this subject.

The Nature and Properties of Light and Color.

First of all it is necessary that we should get some clear idea of the theory of light that will enable us to understand all the phenomena of color with which we meet, whether they be simple or complex. Now, as a matter of fact, there is no such thing as color, objectively considered. It is essentially a subjective sensation, analogous in many respects to hearing and temperature-feeling. And, further, when we speak of color we often mean two very dissimilar things—we sometimes mean the impressions made upon our consciousness by certain phenomena, and sometimes the great physical agent with which those impressions originate. Obviously it is the latter with which we have now to deal. This great physical agent we call the luminiferous ether, which we believe is so extensive as to fill interstellar space, and yet so divisible as to penetrate between the very molecules of matter. We regard light as the result of impressions upon our retina of the almost infinitely quick vibrations of this ether. Now there are numerous beautiful and elaborate methods by which these undulations can be measured, both in length and velocity. Into this, of course, we need not enter; suffice to say that these ether waves reach hundreds of billions in a second.* But what we are most concerned with are the facts that the vibrations take place at right angles to the direction of the ray, vibrating in all azimuths, and that the ray always travels in a straight line, so long as the media through which it passes are of the same density. Before proceeding further, it may, perhaps, be as well to say a word or two more about vibrations in all azimuths. If we take a long rope, fixed at one end, and shake it vertically at the other, the rope is thrown into a set of waves of motion, and the motion originated at one end is conveyed to the other in a set of undulations vibrating in a single (vertical) plane. Now, although the motion has been transmitted, it is certain that the physical agent which transmitted it—viz., the particles of the rope—are in the same position afterwards as before the operation; nothing *travelled* save the waves of motion, all of which vibrated in a vertical plane. Imagine now a ray of light, composed not only of vertical waves, but of waves vibrating in every direction at right angles to the line of propagation. We may, indeed, conceive others as varying elipses, and find that when both axes are equal they are circular; when the vertical axis becomes infinity, the vibrations are vertical; and when the horizontal axis becomes infinity, they become horizontal. Now when such a complex motion as this impinges upon an object, it is no more than we should expect that it should be greatly modified by the nature of that object. Let us follow what happens in such cases under various conditions. First, let us see what takes place when the object is what we call transparent and colored. Now when a ray of ordinary light strikes such an object, that ray is split up into several parts—one part of it is *absorbed* by the article, another passes through it, another is reflected, partly under laws explained in Vol. XVI., page 30, and partly generally diffused. It is by this latter that we *see* the object. If we remember that white light is composed of what we call every color, it soon becomes evident, as before explained, that, in reality, things are the very opposite color to what we call them. Thus, if we take a certain portion of a ray of white light—say, red—that which is left behind is its complementary color, or white *minus* red. Now, white *minus* red is green; and to prove this we have only, first, to split up a white ray into red and green, then re-combine them, and we should get white. It therefore follows that if an emerald *looks* green because it absorbs part of the white light, and transmits the other part which we call green, it must necessarily be red! Probably, the first questions that will here suggest themselves are: Are there any physical peculiarities in gems that will in any way modify this selective absorption? Have crystalline forms anything to do with it, and, if so, what? As we proceed to inquiry, we shall find they have all to do with it; but this must be reserved for a future occasion.

(*To be continued.*)

Notes About Town.

Surveying the Past Year. There is an absolute concurrency of opinion amongst all thoughtful and observing business men, that when one bears in mind the great number of drawbacks which presented themselves during 1891, the result of the year's business is something for which to be more than thankful. At no one period during the whole year was the horizon clear; when there was not one thing there was another. Yet despite all this, money was cheap, and always plentiful in the country. There were no large amounts obtained by risky speculation, which money is usually just as quickly spent; and often the first to get the benefit of it is the jeweler. The trade was all good, steady, genuine business.

* * *

Christmas Trade. So far as we are able to gather, the same remarks apply to the Christmas trade. There was nothing which created a *furore* like there has been sometimes at Christmas, but there was a fair share of good, genuine, steady trade; and in the absence of anything being *en tout rage*, it became possible to move many pieces of stock that are vulgarly called "old pals."

* * *

Butterflies and Dragon Flies. Gorgeous as are the jeweled butterflies (especially some of them when colored stones are introduced), they appear to be threatened by dragon flies, which now are at least as much in requisition as the former, while many houses find them in possession of the field. After all, the butterfly is rather heavy perhaps, and the lightness of the dragon fly suggests to many far more grace and elegance.

* * *

Turquoise on the Increase. The demand for turquoise is still increasing; there is now no stock of any importance that has not got a number of them. There have been made up and sold a number of fine turquoise and diamond festoons and drop necklets, and numerous specimens were being set up with the idea of forming one or more of the many presents to the Royal pair whose marriage would have had such an influence upon trade in general.

* * *

The Sad Change. During the fore part of the month very many of the large houses were extremely busy in preparing for the great event of the year. Everything fine was being brought to daylight, and with the grand stones now in the Trade, some matchless specimens of the Jeweler's Art would have resulted. But alas! the great monster that is claiming some of the greatest and best men of to-day numbers a central figure amongst its victims; and business is at a standstill.

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* Vide the *Horological Journal*, vol. xxxiii., p. 50.

Silver-ware Growing. We thought we had got to the end of the tether of the uses to which articles of silver could be put, but we find we have not, and we are now wondering why we did not think of a charming and useful set that is now selling well, long ago. It is a bath-room set, consisting of sponge, brush, soap and puff boxes, glass bottle and silver beakers. Altogether it makes a very handsome set. Sometimes shaving utensils are added in the shape of shaving-mug, with lather-pot fitting in above the water, silver shaving-brush and razor-box. Some sets are lady's, and others bachelor's.

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The Spoon Fad. Although the spoon fad cannot be said to have laid hold of the community as it did our American cousins, with whom it originated, or even perhaps as much as it has on the Parisians, still, after the turn of the tide, our manufacturers put in some very fine pieces of work, many of which are finding ready sales. There can be no denying that a great change has come over the silver productions during the last few years. Probably it is to be accounted for by the fact that silver jewelry had so good a run for such a long time, and when it waned the jeweler turned his light artistic hand to work which previously had been the monopoly of the more solid heavy-handed silversmith. Several of our American subscribers have asked us for the addresses of spoon makers in this country.

Country Notes.

According to the recently published report, the Coventry Co-operative Watch Manufacturing Society, which was established in 1877 by a few working men, has now a membership of 103. Some alterations have been made in the rules, and interest on capital is now limited to 5 per cent., and, after paying 2½ per cent. of profit to "Educational Fund," the remainder is divided equally between labor and custom. The governing body is a committee consisting almost entirely of practical watchmakers. The society makes steady progress, and finds much support amongst the Co-operative stores, who are their agents. The returns show that last year, 1890, the share capital of the society was £1,785 14s. 10d., and loan capital £101 11s. 6d. The reserve fund is now £633. The trade for the year amounted to £4,518, which, after paying interest on capital, showed a profit of £222. The workers' share of the profit was at the rate of a shilling in the pound on wages. All profits, instead of being paid out, are turned into transferable shares. The society, along with other manufacturers in Coventry, has taken steps to meet the new conditions in the trade, and has put £100 towards a joint manufactory for making "watch movements," and thus has improved its capacity for turning out large quantities of reliable work. The society is now making a speciality of their ¾-plate levers, with chronometer balance, £3 16s.

Those who lay themselves out specially for the supply of prizes should keep their eye upon the Royal Agricultural Society's Show to be held at Warwick next summer, when the prizes will amount to over £5,000.

An advance of 15 per cent. has just taken place in the price of fusee chains with the probability of a still further advance shortly. Watch glasses have risen in price from 80 to 140 per cent. lately, and the price of pendulum springs has also gone up considerably. Our esteemed contemporary, the *Coventry Herald*, very suggestively remarks, as all these materials are supplied from abroad, the necessity is being enforced upon the trade of manufacturing them more largely in this country, and I hope we shall live to see it, which I suppose is equivalent to saying—long life to us.

Mr. H. Abell, a watchmaker, who served his apprenticeship at Messrs. Rotherhams, Coventry, and now of 80, High Street, Ventnor, Isle of Wight, two years ago presented to the town of Ventnor a public clock, which was placed upon the pier. At the last meeting of the Ventnor Local Board a letter was read from him asking permission to take down the clock and clean it, in accordance with the terms of his agreement, free of expense. Permission was granted, and several members spoke in high praise of Mr. Abell as a public benefactor.

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The Coventry Cycle Manufacturers' Trade Protection Association.—On the 12th ult. the members of the above association dined together at the King's Head Hotel, under the presidency of the Mayor, Mr. G. Singer. Amongst those present were Mr. Alderman C. J. Hill (director of the Coventry Machinist Company, Limited), Mr. W. H. Herbert (Premier Cycle Company, Limited), Mr. Alderman Dalton and Mr. C. D. Turrall (Messrs. Taylor, Cooper, and Bednell, Limited), Mr. J. Thomas and Mr. J. Bayliss (Messrs. Bayliss, Thomas, and Co.), Mr. J. K. Starley, Mr. C. A. Palmer (St. George's Engineering Company, Limited), Mr. S. Gorton, Mr. B. Gorton, and Dr. C. W. Iliffe (The Quinton Cycle Company, Limited), Mr. W. Calcott (Messrs. Calcott Bros. and West), Mr. W. J. Grinyer (Coventry Machinist Company, Limited), Mr. Edward Mushing (Centaur Cycle Company), Mr. Parkyn and Mr. J. Marston (Wolverhampton), Mr. Cartwright (Tower Cycle Company), Mr. Bowden (Raleigh Cycle Company), Mr. Hazlewood (Warman and Hazlewood, Limited), Mr. Walter Phillips and Mr. J. Gutteridge (Rudge Cycle Company, Limited), Mr. M. D. Rucker (Humber and Co., Limited), Mr. Townend (Townend Bros., Limited), Mr. Richard Green (Lion Cycle Company), Mr. Morris (William Andrews, Limited), Mr. H. S. Norton (Premier Cycle Company), Mr. F. A. Bullock (secretary to the Association).—The loyal toasts were given by the Chairman.—The Chairman afterwards proposed "Success to the Association."—This was responded to by Mr. Alderman Dalton.—A musical programme was gone through, contributed to by Mr. M. D. Rucker (London), Mr. Richard Green (Birmingham), Mr. H. J. Grinyer, Mr. Grinyer, jun., and others.

What a Protective Association might do.—We have known several shop robberies prevented and thieves captured by the use of the telephone. Often a suspicious character comes in, and by extra carefulness and watchfulness, which the thief can see displayed, he departs without attempting a robbery. We have even known cases where the thief has known that he was being watched, and on departing has politely said, "Better luck next time!" If descriptions of such a character were immediately telephoned round he would be sure to be caught the next place he visited. A similar use of the telephone has recently been made the means of capturing a swindler who has been victimising the Parisian jewelers. A well-dressed man entered the shop of a well-known jeweler, inspected many of the articles, and some time after his departure it was found that he had taken a diamond ring, a pin, and a watch chain. It was too late to give the alarm, so the jeweler contented himself with sending a description of the thief to his fellow tradesmen. Shortly after he received a telephonic message to say that a person answering the description of the thief was at that moment in the sender's shop in the Rue St. Sauveur. He hurried off and was in time to catch his man, who, on finding he was recognised, tried to bolt, but was detained by the assistants and given in charge. At the police-station he gave his name as Filip Prolick, and described himself as an Austrian, but refused to give his address.

New Year Festivities at the Clock and Watchmakers' Asylum.

THE New Year, 1892, festivities at the Clock and Watchmakers' Asylum, New Southgate, were of more than ordinary importance and enjoyment. In addition to the extra supply of "the good things of time and sense," it was the day appointed for the unveiling of the enlarged photograph of the founder of the institution, the late Mr. W. Rowlands. This was a present of the enthusiastic treasurer, Mr. P. Woodman, who was amongst the most delighted of the company present. It was altogether one of the most enjoyable evenings for the inmates, about forty out of the forty-two in the institution being well enough to participate in the festivities of the company, while the one or two not well enough to join the happy throng were of course administered to privately. The proceedings commenced with a "high tea," served in the comfortable board-room of the institution, at which most of the members of the committee, with their families, were present. Mr. T. Baxter, the chairman of the committee, and founder of the feast—for he it was who bore the whole of the expenses—occupied the chair, and near him sat two of the trustees, Mr. George Moore and Mr. E. J. Thompson. That the meal was thoroughly enjoyed by the old folk was plainly evidenced. All sorts of eatables were provided, and hardly anything which could tempt the aged inmates was lacking. There were plenty of willing helpers, too, in the persons of the wives and daughters of committee men, who spoke cheering words to the old people as they helped them to the delicacies provided. The average age of these old people is 73. They reside in comfortable little houses, the eighteen married couples occupying one each, and two widows living in each of the other three, and in addition to this they are provided with pensions—the males receiving £24, and the females £15 annually—coals, gas, and medical attendance. After tea there was a concert, when light refreshments were placed on the tables, and those of the old men who cared to smoke were provided with cigars. The songs were interspersed with a few toasts, but care was taken that the inmates should not be wearied by long speeches. The principal toast was of course "Success to the Institution." This was proposed in a few well-chosen words by Mr. Baxter, who again occupied the chair. He referred briefly to the great development of the institution since its foundation in 1853, and expressed gratification at the fact that the funds of the institution had been largely benefited during the past twelve months by the individual efforts of the persons interested in its work. Mr. G. Moore and one of the inmates (Mr. Hammond) responded. The former remarked that it was a source of great satisfaction to the committee of management to be able to offer such excellent homes as those provided by the institution to aged members of their trade, who, through no fault of their own, were in distressed circumstances; and the latter heartily thanked the committee and subscribers on behalf of himself and his fellow inmates for the benefits conferred upon them. The next toast was "The Health of the Treasurer," which was again given from the chair. The proposer of the toast alluded to Mr. Woodman's generosity in presenting the institution with an enlarged photograph of its founder, which, as chairman of the committee, he formally handed over to the trustees. The portrait was then unveiled, amid the cheers of those present, by Mr. Moore and Mr. Thompson. The last mentioned gentleman made a speech at the conclusion of the ceremony, in which he briefly traced the history of the institution since its foundation. Although, he said, the gentleman whose portrait they had just unveiled, and whose decease they all lamented, was not amongst the first few who took up the idea of founding the institution, he could rightly be described as the founder, for when he was approached by Mr. G. Moore a few months after the idea was originated in October, 1853, he threw his whole heart and soul into the work from that time up till the time of his death. This occurred in 1868, during which year Mr. Rowlands was the master of the Clockmakers' Company. The first report was dated 1856, and at that time the assistance of the Goldsmiths' Company and the Clockmakers' Company—who were by far the largest subscribers in the present day—had been secured, together with that of many of the principal firms of the trade. They had then something like £5,000 in hand, and then it was that the two acres of ground on which the asylum stood were purchased. The purchase money was £700, and the vendor generously returned £100 of the money by way of a donation. The purchase was effected chiefly through the instrumentality of Mr. Wm. Rowlands, but for whose efforts, in conjunction with those of Mr. G. Moore, the institution would never, he believed, have been founded.

Goldsmiths' and Jewelers' Annuity & Asylum Institution.

WE regret that the report of the annual dinner of the above institution was accidentally squeezed out of our last issue. The dinner was the twenty-fourth, and was held at the First Avenue Hotel, Captain Penton, M.P., presiding. There were a large number of influential members of the Trade present. In giving the toast of the charity, the Chairman reminded his hearers that the institution was founded as far back as the year 1827, the object the promoters had in view being the relief of the aged and indigent members of the trade. The amounts granted to annuitants was £15 for men, and £10 for women, except in the case of widows whose husbands had not been annuitants. These men and women did not come before them as paupers, who had not done their best to be independent, for only those who had paid five annual subscriptions were entitled to the society's benefits. There was also an asylum situated at Hackney. The number of annuitants, he was glad to tell them, had increased from three in the year 1828 to 80 at the present time, the payments now exceeding about £109 per month. Altogether as many as 394 persons had benefited by the charity since its establishment, whilst the amount distributed amongst them was no less than £30,487. (Cheers.) The annual subscriptions, it was satisfactory to state, had increased from £103 at the outset to £1,057 at the present time, while the life subscriptions and donations now stood at the handsome sum of £9,542. In conclusion, the Chairman earnestly pleaded the cause of charity, observing that, if it were more widely known, he was sure its income would be considerably in excess of what it is now. The toast, needless to say, was honored with all enthusiasm. "The Chairman" was next toasted, and then the Goldsmiths' Company were cordially thanked for the generous support they extended to the charity. Other toasts followed. The secretary, in the course of the evening, announced subscriptions and donations amounting to a little over £120. It is difficult to understand why every young man connected with the trade does not join this commendable institution. The subscription need not be more than five shillings a year, which can be sent to Mr. Innocent, either at the Horological Institute, Northampton Square, or to his private address. As the experiences of this society unfortunately show, not only are those who are in the receipt of weekly wages liable to be overtaken in such a manner that the charity may prove their salvation, but that the same fate may overtake even prominent men in the Trade.

Sheffield Notes.

(By our own Correspondent.)*

THE Board of Trade returns for the past year show a gradual monthly increase in the exports of cutlery to the United States. This is a natural reaction from the state of nearly utter stagnation which prevailed for some months after the M'Kinley tariff came into force. Prior to that period, goods likely to be affected by the measure were rushed into the States very much in excess of the immediate requirements of the country. The heavy stocks thus created are now evidently worked off. Hence, the gradually increasing demand. It was always anticipated that the very best class of Sheffield goods would always sell in the States—tariff or no tariff. Experience thus far has justified this view of the situation, as the demand is now solely for expensively got-up cutlery. The commoner sorts are, for the present, out of the running altogether.

THE tragic event at Sandringham, which has plunged the highest family in the land into the depths of sorrow, and has called forth the generous sympathy of the entire nation, has necessitated the abandonment of several paragraphs intended for this month's Notes. Under the altered circumstances any elaborate account of the work of the committee of ladies formed for the purpose of getting up a Sheffield present in connection with the contemplated Royal Wedding would be altogether out of place. Needless to say, the whole thing will now be abandoned, and the artistically got-up works in silver, which would doubtless be the form which Sheffield's present would have taken, will not even get as far as the modelling and designing stage. It is known that not a few of these presents from distant parts of the country would have been manufactured in Sheffield, and, in point of fact, Messrs. Fenton Bros., of Earl Street, had an order in hand, which will now, of course, be countermanded.

MESSRS. J. and J. BEAL are the makers of a case of cutlery recently presented to Mr. Howard Vincent, M.P. for the Central Division of Sheffield, by the habitation of the Primrose League connected with that part of the borough. Mr. and Mrs. Vincent will doubtless find the articles contained in the case quite capable of doing their work. The knives, which look as though they would cut, are hafted with the best African ivory. The somewhat ticklish operation of engraving upon ivory has been performed upon each handle, which is ornamented with Mr. Vincent's crest. The spoons and forks, which are of the best nickel silver electroplated, are of the Old English pattern. Although the precious metals throughout only occur in the form of electro-deposit, yet Messrs. Beal have so lavished an amount of excellent workmanship and materials in the getting up of the order, that the present will be found an exceedingly valuable one. Apart from this, however, Mr. Vincent will doubtless value the gift as the production of his own constituents—Messrs. Beal's works being in that division of the borough which he represents.

COPPER-PLATE engraving is one of the many industries which depend, for the most part, on the silver and cutlery trades for their existence. The expenditure upon books of patterns forms a considerable item in the expenditure of a silver and electro-plate manufactory. It gives one no bad idea of the variety of new patterns coming out to look in upon some copper-plate engraver doing an average business. In this way I drop in occasionally upon Mr. Wm. Hoyland, of Rockingham Street, in whose workshop one may generally rely upon coming across the pictorial representations of some of the newest things in the trade. I have often been struck with the excellence of Mr. Hoyland's work—its correctness of drawing and high artistic finish. It says something for copper-plate engraving that photography, although now carried to a high degree of perfection in connection with silversmiths' patterns, has not been able to run it down.

THIS is the season when new patterns are very much in evidence. The lull which is always expected to follow the hurry and bustle before Christmas is favorable to this. The manager who knows his business always contrives to have his patterns ready in time for the first journey of the travellers in the New Year. They quite understand this at Messrs. John Round and Sons, where some new things in the shape of "five o'clock" tea cases attracted my attention the other day. A determined effort is evidently being made by this firm to improve upon the old orthodox patterns—fiddle, threaded, Old English, and so forth. Last year about this time it was spoons with the National floral emblems to finish off the handles which constituted the new departure in this line. This year we have the shields of the principal muncipalities in the country discharging the same function. These cases, some of which are very richly got up, contain six tea-spoons and a pair of sugar tongs. As the whole of these articles weigh only about three ounces they are very suitable for production in silver. The fact that Messrs. Round and Son have gone to the expense of dies cut for each of these shields seems to indicate an expectation on their part that the idea has money in it. On the whole, I think they are right.

THE Christmas holidays have always had a demoralising effect on silver and electro-plate workers. The prolonged holiday following the festive season is felt to be a nuisance by everyone, and yet there seems to be no remedy for the evil. The artisan gets into working order very gradually indeed. The first day he merely looks in, but retires precipitately, as though he expected to be pounced upon by a manager with a job. The next day he not only looks in, but looks round. And so, little by little, he gets accustomed to the idea of work, and finally, at the end of the first week, after the legitimate end of the holiday, he dons his apron and begins work. Even then he is soon tired, and it is fully another week before he gets into full swing. The workman, of course, is not altogether to blame for this state of things. The silversmith detests waiting for a job. As orders are cleared off as much as possible before Christmas, work is consequently not always given out immediately after the holidays with the amount of regularity which the artisan would like. With all this, however, a very fair start has been made this year. Some good orders have come in, mostly from Australia, and Messrs. James Dixon and Sons, of Cornish Place, have got their full share of them. Messrs. Round and Son and Messrs. Atkin Bros. also are busy, and on the whole the year may be said to have opened fairly well.

MESSRS. MAPPIN AND WEBB have ultimately decided to have the electric light in their new showroom, and the contract for running the wires and fittings has been given to the Sheffield Electric Light Company. A great deal of unaccountable hesitation seems to have been shown before this decision was finally arrived at. Even yet the resolution to employ electricity for lighting purposes does not go beyond the showroom. A glance at this noble apartment, which is rapidly approaching completion, will probably supply the reason.

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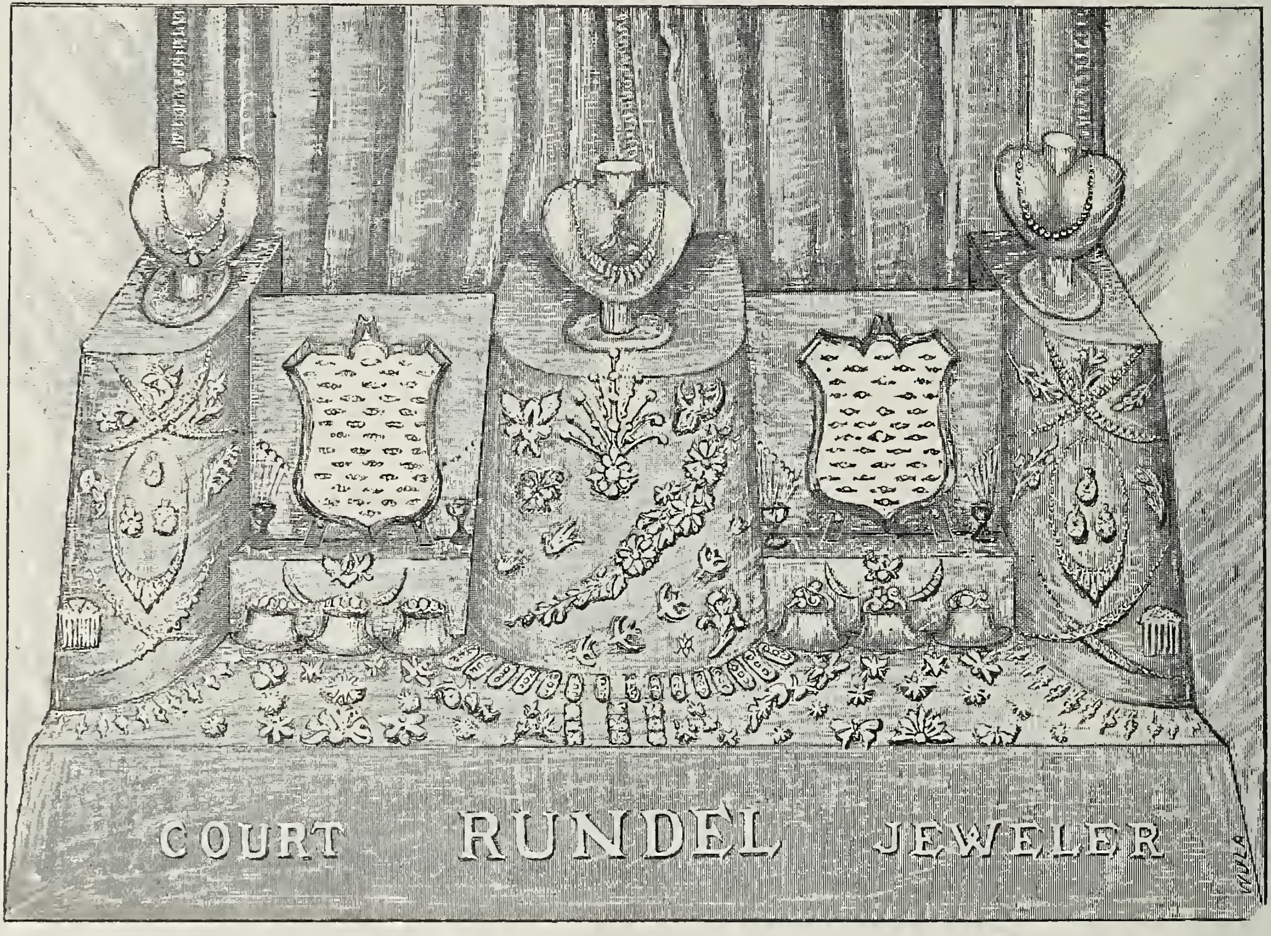
*We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Windows and Window Dressing.

By the Editor.

(*Continued from page* 135.)



THE accompanying illustration shows the window-stand described in our last article, dressed with gem-jewelry. Upon the two end blocks the principal things shown are necklets. Curved surfaces, springing outwards, are always the best for these; the stones stand out much better, and the necklets take a more graceful sweep, looking far more imposing than when on a flat surface, such as that now covered by the ring-trays. All articles other than brooches are held in position by pins. Black pins may be used if they are good ones, but it will be found that many black pins discolour the silver settings in a day or two, so that good white pins, cut to the required lengths, are to be recommended. It will be best to cut an ounce or so of ordinary pins in half an inch to five-eighths lengths, and then give them, and a half-ounce of uncut ones, a dip in the gilding-pot. It will be necessary to use the pliers in putting them in and out; and here let me say a word or two upon the light hand necessary in this work. It must be remembered that the better the velvet, the easier it is marked. Therefore, never let the pliers or the fingers touch it, or it will be crushed and marked immediately. Always endeavour to drive a pin in at right angles to the surface, or as near that as possible. Never drive it in at an angle of 70deg. or 80deg., or it will assuredly mark the velvet, and the mark will just as surely come where you do not want it the next time you dress your window. If some special grip is necessary, the top of the pin can be bent round slightly—but the less the better; and then care must be taken not to drive it in too far, or the velvet will be marked by the necklet. Pendant necklets always show best by themselves, and far better in an ellipse than a slight curve. When necklets have not very much enlarged centres, they may be crossed with the object of forming curves, following the main figure in the block. In these two end blocks with the style and dressing adopted above, the central figure—the pendant necklace—is by far the most conspicuous object, but by rearranging the same articles in scores of other ways, it would not be perceptibly differentiated. Even if the other necklets only hung in similar ellipses, say at 90deg., from each other, the central one would suffer immensely, and would approach the general appearance of the others. Perhaps no one would realise this without making the experiment, although it is very important when one wants to make the best of a speciality. When a necklet is thus hung, the central space also becomes an important position, and something really good should be put there. Naturally, the best things to go there are pendants; but one is hardly enough, unless the window is sparingly dressed. If fully dressed, two, or even three, may be employed, which will be disposed according to the outlines chosen for the necklet. Do not drive in a straight pin at an acute angle upon which to hang the pendant, but make a small U-shape bend, and then turn the stem at right angles to the plane of the paper. The pin that then pierces the velvet will enter it straight, and will not mark it. I have dwelt somewhat fully upon

HOW TO AVOID MARKING THE VELVET,

from the fact that I have several times seen windows ruined the first time of dressing, as when once the velvet is crushed it can never be made to look as well again. Each time the block is dressed it should be carefully brushed with a wisp such as milliners use for bonnets. The block may occasionally be taken to the fire and brushed. When an accident happens, and it gets crushed, it can be taken to the fire and made fairly warm, the crushed nap carefully raised with a needle, and then brushed. The spaces between the necklets may now be employed for sprays, the curves of which can follow those of the central necklet and bisect other angles.

In dressing end blocks like these it is best to take them out, stand them with their flat sides together, and then make the main features of the two to resemble each other. If this be attempted, care should be taken to make the various members of the same height as each other, and a window thus bilaterally symmetrical looks whole, entire, and part and parcel of one exhibit. It is next to impossible to dress one side first; put that in the window, and then dress the other from memory, in such a manner that it will match or go well with the other. Nor is it probable that two assistants will dress the two blocks to match well; they should both be dressed by the same hand. The other parts can be divided up if necessary. The back blocks being perhaps the most important should be dressed first. After dusting the stand with the wisp, the two end blocks can be placed into position; but the centre one had better be kept out of the window until the bottom is dressed. It will be noticed that the bottom has a tendency to divide up into three parts—the central area, and the two larger spaces at its sides. In the above case we have dressed the two side spaces to match, employing a rising sun, conventionalised, as a centre for each. Around these, describing a curve, lie a set of stars; and the rising suns not being sufficient to fill the curve made by the stars, we add an insect on each side. Following the curve of the side blocks, we arrange a row of *fichu* brooches. These are shown lying on the velvet, but owing to their natural topheaviness they look much better if put into separated blocks of the smallest size possible, covered with either the same color of velvet as the stand, or white if preferred. A similar row of small blocks run round the curve of the centre one, currying pearl studs; these blocks should be larger than those of the *fichus*, O. G. with rounded ends look well. For pearl studs, blue-white, or even blue, looks well, but ivory white does not add to the better appearance of off-colored pearls; quite the reverse. Another curve of insects, orchids, and a spray, is sufficient to fill up the intervening space between the stars, and a row of three horse-shoe stands, upon which bracelets are displayed. There is now the space immediately in front of the centre block—one of the best positions of the window—and in this we put

THREE ROWS OF NOVELTIES,

consisting of new enamel flowers. This leaves about the same space on either side, and across this diagonally we lay a row of orchids, filling up the triangle left in front by another of a rather larger size. The bottom and two sides being now finished, we will turn to the centre block. This is no doubt the most important position in the window, but it must be reserved for large and important articles. It is the block that catches the eye of the passer-by, and arrests his attention; and if it consists of small, confused things, they will not have the power of arresting attention. This is therefore the position for large sprays, large flights of swallows—in fact anything large, commanding and imposing. In the centre is shown a magnificent spray, several of which have been made up during the last two years. Following the curve made by it is a row of various-sized swallows, the angle being occupied by a large orchid. Above these, however, is a very important and large space, the centre of which is occupied by a very large aigrette; to the right, Diana sitting on the crescent, and to the left are two flying herons following the general trend from Diana; while above them the space is occupied by a huge pansy in colored gems. The large corner thus left is occupied by an immense orchid. In the case under consideration two ring trays, standing upon easles, occupy the larger portion of the flat back members, and a small stand of pearl pins fills up the vacancies of the corners. In the front of the first step two crescents—or as they are now called, "new moons"—stand out sufficiently clearly to be striking; spearated by another of those curiosities of the floral world—the orchids. Upon the top of each block is a velvet-covered bust, upon which are displayed three different sorts of necklets. These busts are doubtless the very best methods of displaying necklets; and I should recommend everyone to procure a plaster bust, life-size, of a classic lady (or goddess) to stand on the counter, upon which to exhibit necklets to a customer. This adds to their appearance infinitely more than putting them upon a velvet or satin pad.

(To be continued.)

Birmingham Jewelers' and Silversmiths' Association.

THE fourth annual meeting of the above association was held on the 15th January, under the presidency of Mr. Walter Best, the chairman of the association. The meeting was held in the board-room of the Assay Office, kindly loaned for the occasion by the wardens. The various reports and statements of account (which are not yet printed for circulation) were read and passed, and the following officers for the current year were elected:—Chairman, Mr. J. W. Tonks; Vice-Chairman, Mr. W. H. Lord; Treasurer, Mr. W. H. Coley; Hon. Secretary, Mr. G. W. Whitehouse; Auditor, Mr. F. Nathan; Committee, Messrs. W. Best, J. Wainwright, J.P., H. R. Wright, W. H. Small, and P. H. Levy; being, as will be observed, essentially composed of manufacturers, the factoring interest being conspicuous only by its absence. Whether this is intentional or accidental, we must leave others to decide. In his elevation to the chairmanship, Mr. J. W. Tonks receives a well-earned recognition of good and lengthy service rendered to the association as hon. secretary. He has thrown his whole energies into the work, and especially in reference to the Art and Technical schools his exceptional ability and art knowledge have been of invaluable service. Presumably his opportunities in this direction will be increased rather than lessened by his present position. It is pleasing to know that his time and services are given heartily and ungrudingly for the welfare of the trade. The annual dinner of the association, fixed for the 23rd January, had to be postponed to some future date. In consequence of the Court being in mourning, the Jewelers' Member of Parliament, Mr. Joseph Chamberlain, could not be present on that date, and as his presence and speech are looked upon as the characteristics of the evening, it was decided to wait until such time as he could be present. In their circular announcing the postponement, the committee say that the tickets taken can either be held over till the event takes place, or the purchase-money will be at once refunded to anyone so desiring it.

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"Baume Watch, London," the telegraphic address of Messrs. Baume and Co., 21, Hatton Garden, E.C., has been inadvertently omitted from the list of telegraphic addresses appearing in our Diary for 1892, just issued.

Birmingham Notes.

(BY OUR OWN CORRESPONDENT.)*

A MONTH of sadness and of disappointment! Such is in brief the only record I can give of this first portion of the year 1892. The joyous greetings so freely interchanged a month ago have utterly failed of fulfilment, and the happiness of the New Year, as a national matter, has already passed away for ever. It is useless trying to speculate as to what might have been had the happy auguries of a month ago been realised. Doubtless our trades would have shared largely in the prosperity fostered by Court festivities; but with the sad event of the 14th all such anticipations were lost. Apart from the melancholy matter just referred to, the year did not open well. The usual stocktaking operations, in which so many of our local firms indulge at this season, did not turn out so satisfactory as was hoped. In too many instances the stocks were found to be much too large, requiring but little, if any, filling up; while the Christmas sales had been disappointing in several particulars, notably in expensive goods. Hence there was but comparatively little buying done by the factors, who preferred testing the trade with what stock they had rather than increasing it. The course of events has proved their wisdom in this case. Since the lamentable death of the Prince all trade here has been simply at a standstill, a little demand for cheap mourning goods, and a few calls for better class onyx work, being the only ripples observable.

VARIOUS of the Birmingham manufacturing firms—both jewelers and silversmiths, had important presentation work in hand, and others were daily expecting orders to proceed with pieces estimated for. I have not heard upon what basis these interrupted matters will be settled, but presumably the makers will not be actually out of pocket by them.

THE sudden disappearance of a small manufacturer—or perhaps he would be better described as an outworker—in the early part of January, caused some little sensation here. Very few particulars, however, of the affair have leaked out, and I am unable to give details, there being apparently no reason or excuse given by those concerned. There is no indication of anything unusual having occurred beyond the fact of the man's disappearance, and the removal of his sign from the business premises.

ANOTHER disappearance which has had a more serious effect on many of the Birmingham jewelers is that of Mr. Marks. He was a man well known throughout the trade here, having been for several years in business amongst us, and when some few months ago he began buying largely on his own account, he was readily trusted without inquiries on the strength of "auld acquaintance." His tale was that he had just commenced trading afresh in London, and was likely to do a good trade. Some little while later, before his first parcels were due for settlement, he made a series of urgent applications for expensive goods on approbation. Immediately after this he appears to have gone away, as the next communications from his creditors here were returned through the post-office, marked "not to be found." The said creditors are now vainly trying to find out his whereabouts, but so far without success. There is considerable chagrin felt here on this matter, as the man's well-known and irreproachable antecedents were deemed sufficient evidence of his honorable intentions. I have not heard if he confined his attentions to Birmingham, or whether any of the London people have been favored by him also.

IT is a wonder that there are none of the local people included in the Edinburgh "long firm" case, as some twelve months or so ago several inquiries for goods were received here from Liddell and Co. Presumably, however, the inquiries made respecting them did not turn out satisfactorily.

THE matter of S. Feran, of Summer Hill Terrace, at present in the Bankruptcy Court, is being watched with eager attention by many of the jewelers here, who too willingly sold him goods on credit. His affairs are being investigated by the Jewelers' Association.

ANOTHER local firm has had to stop payment during the month, although the matter has now been settled by private arrangement—time only being required for the payment of twenty shillings in the £. Several of the manufacturers were interested for very large amounts, and it is very satisfactory that nothing more than an extention of credit is asked for.

I HAVE no less than four events of a social character to chronicle this month. 1st—The English Watch Company, of Villa Street, gave a dinner to their workpeople at the Great Western Hotel, after which an illuminated address was presented to Mr. Gardener, the manager, from the workpeople. 2nd—A supper given by Messrs. Swinden and Sons, of Temple Street, to their workpeople and friends. 3rd — The presentation of a gold watch and chain, and a purse of gold, to Mr. J. Detheridge, manager to Mr. J. Stainton, Pershore Street, on the completion of his thirtieth year of service. This occasion is especially noteworthy as indicating the pleasant relationship of employer and employed. Several prominent members of the trade were present, and various speeches were made. 4th—The Annual Ball of the Operative Jewelers' Society. Quite a round of pleasure to set off our otherwise dull report of the month.

THE Operative Jewelers' Society is one that does not make much noise in the world, but which, nevertheless, does good work among a certain section of the workmen of our trades. It combines the advantages of a trade and benefit society, and it would be well if all the working jewelers would join it. I am afraid that, as a lot, they are extremely improvident, and any general falling-off in work would bring poverty and suffering to many of them.

THERE has been one solace during the month to the manufacturing fraternity here in the presence of an Australian buyer, who has picked out some very good lines. I was told of a ring maker having placed a matter of £450 with him, but this is mere gossip and not reliable information. As a rule, business people do not mention the amounts of their sales or orders. I know, however, for a fact, that in the aggregate a large quantity of stuff was sold, which has proved a very needful help to the returns of the month.

* * *

ONE of the most important works upon optics has recently been brought out by Messrs. T. Cook and Sons, Buckingham Works, York, "On the Adjustment and Testing of Telescopic Objectives." We hope to give a full account of this valuable addition to our knowledge upon this subject at an early date.

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent.

Our Letter from the Diamond Fields.

(By Vaalite.)

Kimberley, Dec. 26.

SINCE my last letter a number of very important events have transpired, that is, so far as the future of the diamond market is at present concerned. In the first place, Mr. Ward has at last got to the end of his litigation over the ownership of the Wesselton or Premier Mine, and the claims of his principal partner, Mr. Armstrong, have been settled in the High Courts. What a chapter in life the lives of these two men during the last few years present! For at least sixteen years they have been working together, now in the diamond mines, now prospecting elsewhere, sometimes earning £1,000 a month, at another enjoying the fate of many a digger, without a shilling to bless themselves with. However, the fascination of great hauls always drowns the thought of reverses; and so men of this sort get sometimes to think more of discovering a good thing than of making money by it. It was not the case, however, with both these men, although it undoubtedly was so with Armstrong, whose whole life seems to have been absorbed in working newly-discovered localities, not caring a straw about the keeping of accounts, or, in fact, anything connected with the financial side of the question. Ward, on the other hand, was the business man, and always had his eye on the main thing, keeping all accounts and managing everything of a financial nature. So unconcerned was Armstrong about money matters, that since they first joined together as partners he had never seen any of the accounts; but on the great discovery of the Premier, and as soon as its wealth began to develop, he began to wake up, and press for accounts to be rendered and the definition of his share in the property. But the business man, somehow or other, worked and worked again until he had got possession, and although Armstrong was entrusted with several important missions—including a journey to England to try to sell the undeveloped concessions of the right of purchase of the Oliphantsfonteins and Benaudheidsfontein (the latter is the farm upon which is situated the celebrated Premier Mine), and subsequently, when the diamonds had been discovered on the latter and the nature of the mine practically demonstrated, he was sent by Ward to Cape Town to effect the business with Mr. Cecil Rhodes—he even then had an undefined claim, which Ward was disposed to consider less and less as the richness of the property developed. As the property, however, was developing every day, and thousands of carats of diamonds of exceptionally fine quality were being found, Armstrong reluctantly had to resort to the strong arm of the law to arrest his rights from his old chum. Still he never showed any animus against him, and the two men kept friendly all along. At last the case has been brought into court, and after three days' trial, an agreement was made outside the court that Ward should pay Armstrong £40,000, a small enough sum in all conscience! The lawyers were appointed trustees, and upon the completion of purchase, and after he had paid off the other claimants, which include £150,000 to J. J. Wessels, Ward was condemned to pay Armstrong £40,000 clear. The purchase-money was to be given to the lawyers, who should pay one-fourth to the plaintiff and three-fourths to the defendant until the £40,000 was fully settled; and they were then to hand back the deeds of title. This having been settled, no time was lost, and THE DE BEERS IMMEDIATELY CLOSED IN WITH WARD, and bought out his share, so that, as I first pointed out as probable, the mine has fallen into the hands of the great combination. That the De Beers Company did not believe the statement which their admired head had put forth regarding the improbability of diamonds being found in any other hole save the four they possessed was evident by the way they were swelling up their reserve fund, which, on September 30th of this year, had reached £1,138,986. It was out of this fund that they are said to have paid the purchase-money without asking the shareholders for a single penny. But at the same time they did not overdraw on the year's profits or the dividends of the shareholders, as they have recently declared a dividend of 12s. 6d. per share, which is equal to 25 per cent. per annum. And further, of the 210,000 shares in the British South African Company, 158,000 have been distributed as bonuses amongst their shareholders, every holder of five shares receiving one. I wish the "combine" luck! If they have to pay for every mine that is found, as they have had to pay for this, they will have to put by very large reserves; and if they are not able to do this, their "combine," as such, will fall. Of course, that is if other mines are discovered which can put as large or a larger quantity of diamonds into the market, and should happen to be in possession of men who would not do such an injustice to the public as to try to get the same price for their diamonds as do the De Beers. On the other hand an agreement in respect to prices could be arranged, and we may be sure, for the benefit of all concerned, it will be done. However rivals call out against the De Beers, their complaints are probably more actuated by a spirit of envy and jealousy than by a burning desire to do the public any good or kind action.

That a great change will take place in the near future is certain. Whether the De Beers will now work the Premier in a scientific manner and abandon their expensive underground workings at the other mines is not, I believe, decided; but to buy up a big concern like this, with diamonds in great quantities near the surface, easily workable and get-at-able, and then to shut it down, and go on getting them under far more expensive methods, is more than one can imagine of the shrewd heads at the top of the "combine."

But whatever their action, they will have to bestir themselves, for just as sure as the Premier existed, so sure are there other mines; indeed I have been told of several new places lately, which are as certain at their present stage as was the Premier at a corresponding one. Some people have asked why De Beers don't have a proper survey of the whole district made, but a second thought would show that that is the very thing they do not want done. But whether this is a question for the Government is quite another matter; most people, I think, considering it is.

I must not forget to inform you of a lucky find of a digger up the river, who has had the good fortune to come across a fine diamond 205½ carats in weight. What he parted with it for to an ordinary dealer is a mystery, unless we see in him a little of the Armstrong nature. The lucky buyer of the stone has refused £80,000 for it. It is said to be of perfect shape and color, and second only to one river stone in size, while in quality is far the best.

A Big Emerald.—Messrs. Barnett and Scott, of Whitefriargate, Hull, have recently had on exhibition a thirty carat emerald. Owing to the low specific gravity of the stone it is, of course, a rather large one. Some report it as being "as large as a walnut," which is almost as vague as "big as a piece of chalk." However, it is surrounded by 300 grains of diamonds, and forms an attraction to the window, being valued at £2,500. No doubt it will serve to confirm the impression that some very lovely things pass through the hands of Messrs. B. and S.

Transatlantic Jottings.

(From Our New York Correspondent.)

THOSE of your readers who have flourished like a green bay tree under the long-run benefits of Free Trade will not be surprised to hear that anything but complete satisfaction exists over the iniquitous impositions of the M'Kinley tariff. And although it has too many interested partisan supporters to be abolished in one fell swoop, it will assuredly get denuded of its multitude of limbs piecemeal, for at the reassembing of Congress at New Year there were no less than twenty measures introduced, proposing to put various articles upon the free list. I don't know that I am altogether pleased with this step, I guess it would have been just as well to let the nation smart under its shortcomings, as to modify it time after time, and so partially square the people it so materially harms.

* * *

SEVERAL important changes in the import tariffs on watches, clocks and jewelry are provided for in the reciprocity treaty recently arranged between Secretary Blaine and the British Minister concerning the trade between the United States and the British West Indian colonies of Jamaica, Barbadoes, the Leeward and the Windward Islands, except Grenada, Trinidad, and the South American colony of British Guiana. It is probable that the arrangement will go into operation as to the West Indian colonies February 1st, and as to British Guiana March 31st. The official proclamation of the treaty will be issued as soon as it is ratified by the colonial legislatures. Among the articles placed upon the free list are mantel and wall clocks; copper, bronze, zinc, and lead articles, plain and nickel plated, for industrial and domestic uses and for building; crucibles and melting pots of all kinds, lamps and lanterns, watches, when not cased in gold or silver, and watch movements uncased. It is understood that the packages or coverings in which the articles named are imported shall be admitted free of duty if they are usual and proper for the purpose. In Jamaica the lamps and lanterns to be admitted free must not exceed 10s. each in value.

* * *

I HAVE heard a good deal lately about two new gem stones. One is called "Sarascite" and is found in the Nevada district; it is described as being a beautiful stone of a lovely dark green color. The other is called "Thompsonite," and comes from away up Lake Superior. As it is spelt with a "p" I suppose it is something different to the British stone Thomsonite. If it is not—well, it is not an American gem.

* * *

I HEARD a curious case the other day of a man putting 13,000 dols. worth of diamonds and other valuables, contained in two boxes, into the waste-paper basket, and forgetting all about them till the next day. Then the waste-paper basket had been emptied. Oddly enough, they were recovered unopened at the waste-paper office.

* * *

G. W. TROUGHTON, of 176, Broadway, New York, has on show just such a collection of fine Wisconsin pearls as is not elsewhere to be seen; nearly every color a man can name is represented. There is one, a magnificent bronze, weighing 37 grains.

* * *

IT may seem difficult to realise that the ordinary cuteness possessed on this side should be at such low water as for a jeweler to buy brass filings for gold, especially when he was buying it at about half gold price. The tale simply told is this:—A few days ago a New York jeweler received a visitor, who told him that two Russian exiles had a quantity of gold dust to dispose of, obtained in the Siberian Mines; and giving his name and address, asked the son of the crucible if he would come and see it. A visit was made, and the stuff examined. Samples were taken home and assayed, and these proved to be 23½ carats fine. Seeing an opening for a good "bis," he got together a syndicate of friends, who supplemented his 400 dols. with 3,200 dols, and with this the delighted bargain hunter procured about 20lb. weight of what afterwards proved to be brass filings. Since half an hour after that bargain our hero has been unsuccessfully searching for those exiles.

* * *

THERE has been a great sensation in Dayton, O., over the robbery of 18,000 dols. worth of diamonds stolen from a car while R. Kramig, of the firm of Herman Keck of Cincinnati was taking a bit of lunch. This was an operation which lasted about five minutes, but was a period of time sufficient to effect a clever robbery and get off, as the fellow passengers saw no one either enter or leave the car. I still think it is a bit careless of a salesman to leave such a stock as this in a valise under a car seat; but as Mr. Keck don't think him to blame I won't interfere.

* * *

THE stock is insured, which may perhaps account for Mr. Keck's indifference. However, 1,000 dols. reward was offered. From the first, suspicion fell upon a saloon keeper, Fritzie Dhein, who has been a diamond crook, and served eighteen years behind prison bars; but he managed to assume innocence, and account for his actions on that day, although they were mighty suspicious. However, Fritzie Dhein and others have been apprehended, and the sparklers have been discovered buried. Now comes a dispute about the reward!

* * *

THE papers on this side are making a bit of a noise over what a lapidist on South Tenth Street called a "new scheme to entrap the unwary." It appears that a lot of paste is made in England to be cut up into imitation gems, and sent as a commercial commodity all over the world. Some of this has reached here. I don't see there is anything new in it nor, so far as I can see, anything criminal. It is only sold in the first instance for what it is, and if a man attempts to deal in gems without knowing them from glass, I think he ought to pay for a little knowledge.

Round the Watch Factories.

THE automatic machines set up this year by the American Waltham factory are far in excess of previous annual additions, including jewel-setters, pinion cutters, engraving, stoning, and scrolling machines, with lots more in progress.

THE Waltham Dial Company hopes shortly to have a new brick building four stories high, and 150 by 30 feet. It is increasing its capital stock to 100,000 dols.

THE Waltham factory roll is rapidly nearing 3,000, being 2,920 on the 1st. November.

THE Elgin are manufacturing a new 18-s. patent crown repeater. They have dropped the ladies' lever 6-size. But all things are not so rosy at Elgin as one could wish. The late reductions have given rise to great discontent, and I should not be surprised if there is a general strike before this letter reaches you.

THE Dueber Watch-case Company is said to have made a payment of 50,000 dols. to creditors in advance.

THE Cheshire Watch Company's assets have been sold for 50,000 dols.; the plant originally cost 150,000 dols.

THE Connecticut Electric Clock Company has been formed with 15,000 dols. capital. The speciality is an electric clock that will ring an alarm for four hours if it is not stopped.

RUMORS of new clock factories are current—one at Long Branch, N.J.; another at Salen, N.Y.

Obituary.

THE LATE SIR GEORGE BIDDLE AIRY, K.C.B.

(Formerly Astronomer Royal).

If there is one high position in the land with which the science of chronometry is more connected than any other, it is assuredly that of the Astronomer Royal, as it is difficult or even impossible for astronomy and chronometry to exist independent of each other, much of the two sciences being the common property of both.

With the late Sir George Airy, the science of chronometry has lost a valued friend, who bestowed so much of his valuable time, amongst other things, upon the forms of the teeth of wheels and escapements, and with a pendulum he weighed the world. But it would be impossible to detail his great achievements and the marvellous improvements he made in many branches of observation here; some leading features of his life, however, may be noticed. He was born at Alnwick, Northumberland, on July 27, 1801, commencing his education at private schools at Hereford and Colchester, passing to Manchester Grammar School, and in 1819 to Trinity College Cambridge, where he was most successful, coming out Senior Wrangler in 1823. In 1826 he became Professor of Mathematics, a chair formerly held by the illustrous Newton. But even before this he had published papers in the *Transactions* of the Cambridge Phil. Society on "The Lunar and Planetary Theories," "The Figure of the Earth," some most important papers on "The Undulatory Theory of Optics," which subject at this time was in a very backward condition. Although nearly seventy years have elapsed since their production, they still remain amongst the most important contributions to our knowledge of the undulatory theory. Amongst other papers of about the same date, of special interest to chronometry were "The Form of the Teeth of Wheels" and "Escapements." In 1828, at the formation of the Cambridge Observatory, he became Plumian Professor of Astronomy, when he commenced those arduous labors in the spacial science which will carry his name down to posterity. In 1832 he compiled for the British Association a "Report on the Recent Progress of Astronomy" which delighted and fixed so many minds at the time. In 1835 he was appointed Astronomer Royal, into which office he brought with him all the skilfulness and ingenuity he had displayed in other positions; but here the wider field presented a thousand paths for the great mind to manifest itself, and accordingly, he set to work to improve and invent all sorts of instruments too numerous to mention. He also proposed to the Government that magnetic and metrological observations should be made, the value of which we are now enjoying. As it was in his time that iron was being largely employed for ships, the great question of the disturbance of the compass by the metal employed presented grave difficulties which were practically overcome by him. It is, in fact, difficult to point to a single scientific difficulty that cropped up upon which the Government did not consult him. He also assisted in restoring the standards destroyed by the fire in the House of Commons in 1834. As might be expected, honors were showered upon from all directions, both abroad and at home.

He was President of the Royal Society, Medallist of the French Institute, of the Royal Astronomical Society (1833 and 1846), of the Royal Society, and of the Institute of Civil Engineers. He resigned his appointment at the Royal Observatory on 15th August, 1881. But he did not leave the neighbourhood of his old labors, as his house on Croom's Hill was only a few minutes' walk from the Observatory. On the 2nd January, 1892, this most useful of useful lives was brought to a close at twenty years after "the allotted span" of man.

MR. GEORGE BURNAND.

The father of the Spectaclemakers' Company, after sixty years connection, passed away with 1891. The name of the old firm of Messrs. G. Burnand and Co., of 69, Lombard Street, of which Mr. G. Burnand was the senior partner, is well known in the trade. "But," says the *Herts Mercury*, "it is not as a successful man of business that he is best known in the district in which he resided, but as a country gentleman of broad and liberal sympathies—one in whom the poor of the neighbourhood always found a helping friend in time of need, and one to whom appeals for practical assistance in the furtherance of worthy objects were never made in vain."

The English Watch Company's New Baby.

We are pleased to call the attention of the trade to the latest production of the English Watch Company of Birmingham for several reasons. First and foremost, because it is of English construction throughout, and falling as it does under the category of complicated watches, it drives another nail into the coffin of foreign-made articles, which usurp the place of those which ought to be made here; and what is perhaps even more important, it tends to remove the disgraceful stigma that we cannot do complicated work. But that we not only can do complicated work, but even do it in the simplest, most compact, and effective manner, is shown by the calendar here referred to. The calendar-work is of the simplest and most inexpensive description, and is easily fitted to a watch with which it has practically no connection, and we should say, that unlike most calendars, it cannot very easily get out of order. There is also another advantage that strikes us, and that is the small amount of room the calendar-work occupies. The days and months are shown through two apertures in the dial, which in no way detract from the appearance of the watch, and are easily altered from the winding-button, the months being altered by a pin protected by the bezel.

The G. and G. B. A.'s. Maiden Claim.

We regret to see that there have been so many cases of window smashing, accompanied by robberies of late. It is really getting a very serious thing; several in a week having come to our notice. Fortunately in some instances they were insured, and the loss made good. Mr. Pocket, of City Road, was the first to send in a claim on the "Goldsmiths' and General." As soon as the notice was received by the company, the claim was investigated, and the amount (about £50) at once paid. No better argument for the importance of this Society could be urged. It, therefore, behoves everyone who has property worth losing, to be insured against its loss. The expense of doing this is assuredly nothing, compared with the ease and safety in which one can rest, and henceforth the dreadful fogs need no longer be the black ghosts of everyone possessed of a window. We are fully aware that many consider their valuables are locked up with sufficient safety, and will continue to think so, until like many others they find out their mistake to their cost. But every window in which goods are displayed is liable to be thus broken and robbed, and hence the need for burglary insurance. We call especial attention to this kind of loss, as some might not associate it with burglary assurance.

Efforts are being put forward to form in Belfast a Watchmakers' and Jewelers' Union. The lines are not detailed, and we fear it has commenced in too half-hearted a manner to result in anything.

The Markets.

THE DIAMOND MARKETS.

Amsterdam, *January 29th.*—Our market during the first half of the month was very much depressed; there was hardly any demand, and factories were almost at a standstill, no foreign buyers being in this town. In the second half of the month things looked a little better, foreign buyers made their appearance, and business commenced to revive though prices were yet far from remunerating for sellers. There are always some lovers of "sharp practice" at hand, who wait for such times of depression to pick up bargains, and not infrequently they get them. The sales were most in middle-class stuff, that is, from two to four grains stones of secondary purity. But little as yet has been done in stones of fine quality and first water. The sad death of the Duke of Clarence, and the failure of the expected marriage festivities at Court as amongst the aristocratic families, are considered here prejudicial to the diamond business.

Paris, *January 29th.*—The demand for polished diamonds has, during the latter part of January, considerably increased. Several very important lots found purchasers. Prices were also better. Most of the sales were for American accounts. Local speculation has begun to revive.

London, *January 30th.*—The Cape steamers this month have arrived regularly and in good time at Plymouth and Southampton, and brought the usual assortments of rough to the London market. Prices, however, were steadily kept up, and through the depression in polished diamonds during the first half of the month were the sales of less than the usual importance.

SILVER.

Although the silver market opened pretty firm with the New Year at 43¾, and even rose to 44¼ by the 4th ult. Indian exchange soon told upon it; indeed, owing to the uncertainty of the Oriental exchange, it was impossible to get a reliable quotation on the 10th, and under this influence it waxed and waned a bit till the 19th ult., when it fell to 42 9-16, a price at which it remained during the greater part of the rest of the month,

TIN.

There has been very little up and down motion in tin during the month, generally over £90, but not £91. After the quietude consequent upon the prince's death, it dropped 2s. 6d. below £90.

COPPER.

Copper has enjoyed a little more variation, but the tendency was on the whole a lowering one, although as much as £48 was quoted at the early part of the month; it fell subsequently to £45.

SPELTER.

Spelter, perhaps, has been the most steady of the metals, the usual price being £22 2s. 6d., although it went 12s. 6d. higher.

QUICKSILVER.

Quicksilver had a general climb down from £8 to £7 7s. 6d.

The metal markets were closed on the day of the prince's funeral.

BOARD OF TRADE RETURNS FOR 1891.

IMPORTS.

		1891.	1890.	1889.
Clocks and parts thereof	...	£505,545	£512,419	£454,610
Watches ,, ,,	...	643,887	674,649	691,006

Showing a continued decline in imports, which, we trust, means a great consumption of the home product.

Reviews.

The Electro-Platers' Hand-book. A practical manual for amateurs and young students in electro-metallurgy. By G. E. Bonney. London: Whitaker and Co., Paternoster Square, E.C., price 3s.

We must at once say that the sub-title of this book is somewhat misleading. We cannot imagine what an amateur has to do with the kind of work up to which this manual leads, including as it does the latest and largest dynamo work in use to-day. When it is known that the author is a thoroughly qualified electrician, and has had the full assistance of the managers of several of the large Birmingham houses, one may expect to find something both useful and important not only to the amateur, but to the man who has to get his living by the service of electricity. The whole of the introduction and description of batteries is got through in thirty pages, and as a matter of fact, all necessary information about them is condensed into that space in a thoroughly practical manner. The author then starts with the dynamo, commencing with Woolrich's first and leads up to the most important ones at present in use. Material, preparation of work, and plating with various metals are all fully dealt with in turn. In many respects we consider this one of the very best books on the subject.

Webster's International Dictionary, with Appendices. Messrs. George Bell and Son, Covent Garden, W.C.

It may perhaps appear a little late for us to review this most important work, but the fact is that although so many literary and scientific critics have vied with each other in singing its praises, in acknowledging it to be the standard dictionary of the day, few have attempted to point out its importance from a technological point of view. It is from this standpoint, however, that we would specially recommend it to our readers, as we unhesitatingly affirm it has no compeer. Many are unaware of the unsatisfactory and unscientific state of the technicalities of many trades, amongst which we might mention watchmaking. Numbers of even the most commonplace words used in our trade are often wrongly applied; but with the adoption of a uniform nomenclature, as employed in this work, not only would things be established on a more scientific basis, but less confusion, and more exactness would exist. The new edition of this work has been prodigiously increased, and includes on its staff of contributors the very highest authorities of the day in each of the special branches, so that it can be confidently relied upon.

We must also point out that, unlike an ordinary dictionary, it is not content with a line of explanation for each word. All important words have quite a tabulated article, not only of their roots and analogues in numerous European languages, but quotations showing the manner in which the word has been employed in the past. Opening the book at hap-hazard the first word that strikes our eye is *energy*, and as this may be taken as a fair sample of how important words are dealt with, we feel we cannot do better than reproduce it.

[Energy (ĕn′ĕr-jy̆) n.; pl. Energies (-jĭz) (F énergie, LL energia, fr Gr. ενέργεια. fr ἐνεργός active ἐν In + ἔργον work. See In, and Work). 1. Internal or inherent power, capacity of acting, operating, or producing effect, whether exerted or not: as men possessing *energies* may suffer them to lie inactive. 2. Power efficiently and forcibly exerted; vigorous or effectual operation; as the *energy* of a magistrate. 3. Strength of expression; form of utterance; power to impress the mind, and arouse feelings; life; spirit; said of speech, language, words, style; as, a style full of energy. 4. (*Physics*) capacity for performing work. ☞ The *Kinetic energy* of a body is the energy it has in virtue of being in motion. It is measured by one half of the product of the mass of each element of the body, multiplied by the square of the velocity of the element relative to some given body or point. The *available Kinetic energy* of a material system, unconnected with any other system, is, that energy which is due to the motions of the parts of the system relative to its centre of mass. The *potential energy* of a body or system, is that energy which is not kinetic; energy due to configuration. *Kinetic energy* is sometimes called *actual energy*. *Kinetic energy* is exemplified in the *vis viva* of moving bodies, in heat, electric currents, &c.; *potential energy* in a bent spring or body suspended a given distance above the earth, and acted on by gravity. (&c., &c.)]

But this is only one example of how thoroughly everything is treated, and of the manner in which a standard is maintained, not only for isolated words, but for entire subjects. Take Heraldy, for instance, so invaluable to the trade, and yet humiliating to say—so little understood. In the whole field of this important science there is not likely to occur anything that is not explained and illustrated in the work now before us. Our Craft is applied to from every corner of civilisation to emblemize every action under the sun, and we can confidently assert, after many years of such occupation, that in this connection there is no other book extant so valuable, useful, and suggestive as this illustrated dictionary.

Small Publications.—Amongst the various almanacs that have reached us again this year reference might be made to Calvert's Mechanics' Almanac, which contains a lot of valuable information. Although it is intended to cover a very wide field, it contains very much that is useful to various branches of our trades. London: John Heywood, 1, Paternoster Buildings. Price 4d.

We have also received Saxon and Co.'s diagram of time and longitude, said to be copyright. Let us hope most of it is, so that people may not employ it again. We should, however, very much question if anyone could "copyright" a circle divided into degrees and minutes on the outside, and into hours and minutes on the inside, such a diagram having been in use since the time of the ancients.

The American Waltham Watch Company have published two almanacs, excellent specimens of typography. One of them contains a portrait of H.R.H. the Prince of Wales, and the other that of H.R.H. the Princess. The work put into them may perhaps be considered a little too good for an almanac, as already we have seen them framed.

Prehistoric Pearls.—In excavating a 500 ft. mound on Nov. 14th in Ohio, Mr. Putnam, at a depth of 14 ft., discovered a skeleton of a man encased in massive copper armour. The most peculiar part connected with the encasement was that the mouth of the man was stuffed with pearls of immense size, whilst round the neck was a necklace of bears' teeth and pearls.

The Flowers of the Sky.—In the December number of *Knowledge* the able editor, Mr. A. C. Ranyard, shows some pictures, both floral and arboreal, which fully justify one talking about "the flowers of the sky." No doubt when some very clever people see them they will affirm that the former users of the above phrase knew all about the modern revelations of stellar photography.

Exhibition of Metrological Instruments.—The trade are reminded that the Council of the Royal Metrological Society will hold an exhibition of instruments, maps, charts, etc., in any way connected with this important and growing science, from March 15th to 18th, at their offices, 25, Great George Street, S.W. They will be glad to receive any instruments, or anything new in connection with climatology. No doubt the exhibition will prove not only very interesting, but very important also.

A curious advertisement appears from a Mr. Samuel Henry De Saulles, of Spencer Street, Birmingham, which tells its own "tale." "To Messrs. Chance Bros. and Co., Spon Lane. I admit that I have done wrong in marking some sheet glass as crown glass, and selling it so marked for microscopic and photographic purposes, and I authorise you to publish this admission as you think fit."

Items of Interest.

Direct Positives. A communication by Herr Waterhouse in Eder's "Jahrbuch" announces that positive photographs can be obtained direct from the camera by adding small quantities (about one-fifth per mille) of a substituted sulpho-urea to the developer. Experiments were made with allyl- and phenyl-sulpho-urea added to eikenogen. Sulpho-urea acts similarly, but without satisfactory results. All of these substances are powerful accelerators.

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Optical Inventions. At a recent meeting of the Royal Microscopical Society, Mr. E. M. Nelson reported on Messrs. Powell and Lealand's new apochromatic 1-12 of 1·4 NA., which he said, after severe testing, had proved to be a remarkably fine glass, being specially fitted for microphotography, and free from color.

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At the same meeting, Mr. Bernard exhibited a new mechanical stage, in which he had endeavoured to imitate the movements of the fingers, in turning slides about under the microscope. The mechanism was all under and at the side of the stage. In this invention the slides are moved by light adjustable frames, which secure a ready movement of 10 × 5 cm. It is obvious, with such a range of movement, large troughs can be searched all over. The idea was very favorably received.

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Dr. Parker on Watches and Clocks. Many may wonder what the popular lecturer of the City Temple knows about watches and clocks to attempt to lecture upon them, but they must bear in mind that the reverend gentleman has a happy knack of amusing people over subjects of which he but knows very little. Of course, it was not upon the construction of watches and clocks, or the principles upon which they are based, that he dilated; but by likening the three hands of a watch or clock to three classes of men, he threw out some very interesting remarks. He said, apparently the thread-like one was doing the work of the whole machine. There was a long, thin, genteel looking one, which, he supposed, was the lady of the party. But see the little one—the thick, short, stumpy, sturdy one, that did not move at all. He might take off that little busy one that looked as if it were doing the work of the whole machine, and not lose much; he could still tell the time. He might take off the long, thin, genteel one, and still be able to tell the time —we don't know if this means we can do without the ladies! — but take off the thick, stumpy, short, sturdy one, and the watch was useless. Likening these to various classes of people, he kept the audience highly amused, and although many may not think there was much in it, it is highly suggestive when one wants to say something "shoppy" and yet amusing, but doesn't know what to say.

The Trade of Clerkenwell.—Representatives of the various trades of Clerkenwell met on the 6th ult., at the George and Dragon, St. John Street Road, to take into consideration the best means of stopping the sale of foreign copies of Clerkenwell goods without the efficient marking of the same, as prescribed by the Merchandise Marks Act. Mr. W. M. Foxcroft, ex-Churchwarden of Clerkenwell, presided. It was resolved to form an association for the protection of the local staple trade.

In and Out the Courts.

An Important Case.—On January 4th, at the Exeter Quarter Sessions, before the Recorder (Mr. T. Bucknill, Q.C.), Frederick Treeby Reid, watchmaker and jeweler, of 179, St. Sidwells, Exeter, sued John Saunders, builder, of Howell Road, for £6, the price of a lady's gold chain. Evidence showed that in October, 1890, defendant purchased from the plaintiff a watch and chain—for £15 and £6 respectively—as a present to his wife on their silver wedding. £6 was paid on delivery. Twelve months later, defendant complained that the chain was not eighteen carat, as it had been represented to be. Plaintiff said when he purchased the chain from Mr. Jesty, manager for Mr. Nix, of Exeter, he was under the impression it was eighteen carat. Evidence given by Mr. Towill, jeweler in the Arcade, showed that examinations and assays proved that the chain was less than fifteen carat, but was worth £5 or £6. Mr. Beal contended that the plaintiff's warranty that the gold was eighteen carat was a false one. A verdict was given for the plaintiff with costs, it being considered that the plaintiff did not falsely state that the chain was eighteen carat when he knew it was not.

A Grab Thief.—Arthur Dudley, 29, described as a draper, of no fixed home, was charged at Marylebone Police Court with stealing a gold watch, valued at £7 10s., the property of John Taylor, watchmaker and jeweler, of 147, Praed Street, Paddington. The prisoner went to the shop and asked to be shown some watches. Some were brought for his inspection, and he selected the one in question. While the prosecutor was making out the bill for it the prisoner ran out of the shop with the watch. He was pursued and stopped, and the watch was taken from him. He now pleaded guilty, and said that he had been driven to do it through want. Mr. Montagu Williams passed sentence to one month's imprisonment.

Something Like An Expert!—Recently at the Marylebone County Court, Mr. Meyer Jacob, a solicitor of London and Cardiff, sued Mr. H. Y. Smart, jeweler, of Westbourne Grove, to recover £20, the value of two opals set in a ring left with the defendant to repair, which were alleged to have been changed. Mrs. Jacobs said that when she left the ring at one of Mr. Smart's shops, it was set with two egg-shaped opals, reflecting red light. When she called for the ring, two inferior stones had been substituted. Upon noticing this she called the attention of the assistant to it, who resented the idea, and referred her to Mr. Smart, who was at the other shop. On showing the ring to Mr. Smart, and asking him his opinion of the stones, he replied they were moonstones worth about sixpence each! She then told Mr. Smart what she thought had happened, with the result that the former threatened to turn her out of the shop. Other witnesses were called, who testified to their having often seen and admired the opals, and were sure they had been changed. Of course, Mr. Smart and all his belongings swore that the opals had not been changed, and afterwards Mr. Walter George was placed in the box as a lapidary and expert, who made some statements which form a good supplement to the fact of a man not knowing opals from moonstones, further suggesting that the opals had been reversed in the re-setting. Without giving an opportunity for the theory to be tested, the Judge gave a verdict for defendant, without costs.

The East-end Diamond Ring Robbery. — William Marshall, 28, described as a bootmaker, of 9, Dorset Street, Spitalfields, has been apprehended for the outrage and robbery at Mr. Cook's, 565, Commercial Road, reported in our last. It appears that one of the witnesses saw him hanging about the premises on the night of the 16th December, and again on the night of the robbery. Further, a publican saw him do it, and people in a shop opposite also saw him and the other two fellows run away. From descriptions given to the police they were able to apprehend him. Four of the rings have been recovered. The prisoner has been committed for trial.

A Female Window Smasher.—Now that window smashing is becoming such an every day occurrence, and one that can often be far more successfully performed than might be imagined, a woman has turned her attention to the subject. Unfortunately for her, as she was loitering about the shop of Mr. Louis Sinecal, 42a, Fulham Road, previous to the commencement of operations, she was being watched by a laudable policeman, so that as soon as she performed her work of window smashing and securing the plunder the defender of the rights of property pounced upon her. It was only with difficulty that he could get the determined burglar to the station. She is now awaiting her trial.

Will "Uncle" Lose His Laurels?—There are many people who know nothing of the "laws of averages" and less of the extent of the business done by the poor man's banker, who consider the avuncular relative a veritable "fence." Such an idea, groundless as it is when pushed to absolute fact, has existed for a long time; but revelations made on repeated occasions lately point to other directions, viz., the beerhouse keeper, as the more deserving of suspicion. Several instances of beerhouses being "fences" have recently been brought before the public notice, so that we should think they will be inclined to alter the old verdict. At the beerhouse of a man named Hook, landlord of the British Queen, Windmill Road, Croydon, were recently "found" 140 pieces of jewelry, etc,, the proceeds of robberies, and although charged with burglary, and pleading guilty to six indictments of receiving stolen property, he was let off with three years' penal servitude.

Receiving Stolen Property.—At Wandsworth Police Court, Osborn Hinbest, Catherine Hinbest, and Joseph Ward, marine store dealers, were charged with receiving a large quantity of watches, jewelry, etc., stolen from the premises of Mr. Bernard Weinstein, jeweler, High Street, Battersea, together with other indictments of stealing. Hinbest having had a previous conviction proved, the prisoners were committed for trial.

A Plausible Snare.—William Thompson, who was apprehended on leaving Portsmouth prison, when he had undergone a sentence of nine months for fraud, was charged at Marlborough Street Police Court with obtaining two gold scarf-pins from Mr. James Jay, Jeweler, of Oxford Street. It appears that the prisoner entered the shop in March last, and stated that he was one of the clerks at Messrs. Gasks', asking to be allowed to take away two or three pins for the purpose of showing them to his colleagues, who were about to make a present to one of their number on his marriage. The pins were valued at £3. Needless to remark prisoner did not return, but went forthwith and pawned them. Mr. Newton sent him back to prison for three months.

Important Action For Slander.—In the Queen's Bench Division on January 13th, Simon Hairn Nyburg, diamond broker, Hatten Garden, sued Solomon Ullman, pawnbroker, of the Borough, for damages, in respect of alleged slander, imputing to the plaintiff that he had taken away from the defendant's premises a parcel of diamonds of over £400 value. The defendant pleaded privilege. It appeared that in April last plaintiff and another diamond merchant from Holland called upon the defendant at his shop in the Borough. After reciprocatory exhibits of diamonds they left the office. During the time they were in the office the defendant left the table upon which were the diamonds, and was engaged at the telephone. After the two merchants had gone, Mr. Ullman and his son went to lunch, and upon their return not finding the parcel of diamonds there, the defendant went to Mr. Nyburg's office and told him what had happened, at first asking if he had taken them by mistake, but subsequently adding "if you will return my diamonds, nobody will know anything of

After the cross-examination of the defendant, the jury turned a verdict for the defendant, his lordship giving judgment accordingly.

Responsibility of Hotel-keepers.—Mr. Burnett Weigel, of 35, Hatton Garden, recently had some curious hotel experience. Going to Manchester on business, he proceeded to the Grosvenor Hotel, but as the proprietor refused to be responsible for any loss which might occur in Mr. Weigel's stock while he was on the premises, the latter proceeded to another hotel, where the bags were placed in a safe, the keys of which were kept by the proprietor and the head boots; but even under such care as this, it transpired they were not secure, and goods to the value of £28 5s. were missing. An action was accordingly brought against the hotel-keeper, which resulted in judgment for the plaintiff with costs.

Random Brieflets.

Lectures for Opticians at Last.—We are intensely gratified to be able to state that the Spectacle Makers' Company are about to turn their attention to technical education, and are about to establish lectures for opticians. We hope shortly to be able to give a full account of when and where these will be delivered, and we hope they will be well supported by the trade, as we may depend upon it they will neither be continued or extended unless they are at once appreciated.

The Nautical Almanac for 1895 is out, upon the lines of its predecessor. It is the last which will be issued under the direction of Dr. Hind, who retires from his post after nearly forty years' inestimable service. He will be succeeded by Mr. A. M. W. Downing, M.A., Fellow and Secretary of the R.A.S., who for twenty years has been one of the Assistants at the Royal Observatory. In 1895 there will be three partial eclipses of the sun, all invisible in this country, and two total eclipses of the moon, one of which will be visible here.

Magnetic Oxygen.—At a recent meeting of the Royal Society the President announced that he had just received a note from Prof. Dewar stating that the latter gentleman had that day had proof of the magnetic nature of "life's vital agent," for, having placed some liquid oxygen between the poles of the historic magnet of Faraday, he had seen the oxygen leap up to the poles, and remain there permanently attracted until it evaporated. This reminds us of our old class days, when a student who was accredited with being somewhat eccentric, stated that it was the oxygen that turned iron into a magnet (magnetite $Fe\ O\ Fe_2\ O_3$).

The Great Electrical Exhibition.—We must remind our readers that before another issue of our Journal the great Electrical Exhibition at the Crystal Palace will be in full swing, and will be the largest of its kind ever held. It is already open, and there is an immense amount to interest the Trade, sufficient to necessitate several journeys.

Discovery of Gold in Ireland.—About a fortnight ago gold ore was reported to have been discovered on Lord Belmore's estate, Ballintrim, Co. Tyrone, but it is probably nothing more than has been done thousands of times in various parts of Ireland.

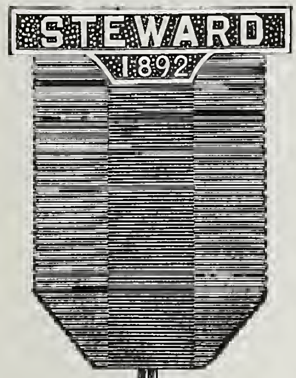
London Fogs.—At the meeting of the Royal Metrological Society on December 16th, Mr. F. J. Brodie read an extremely interesting paper on the prevalence of fog in London during the last twenty years, which takes the palm for mugginess away from November, the average number of foggy days for several months being as follows: February, 6·6 days; November, 8·8 days; January, 8·9 days; October, 9·2 days; December, 10·2 days. The fogs in London often contain so much sulphuretted hydrogen and other noxious gases that a silver case left open for only a few minutes, will have the whole of its contents turned brown.

There is another extremely interesting paper upon the secular variation of latitude, in the December number of the *American Journal of Science*. The mean variation at several stations are given, and suggestions made for observations that will give the true account of change and shape our planet is undergoing.

Prof. Foot's paper on the Diablo meteorite, read before the Am. Ass. for the Advancement of Science, has been published in *Nature* of December 24th. This paper contains some further account of this remarkable find than we were able to give. We have a few of the illustrations from the original blocks as used in *Nature*, and should be pleased to send them to subscribers who send stamped envelopes.

Mr. H. B. Crouch, an enterprising jeweler, of St. Mary Street, Cardiff, displayed a very effective device on the day of the funeral of the late Duke of Clarence. It consisted of a shield of black satin, on which was executed in white a ducal coronet, with the monogram "A.V.," and "In memoriam," surrounded with white chrysanthemums and ferns interspersed with crape and white satin rosettes. Beneath this were some apt lines. At the side entrance to the shop was an excellent life-like steel engraving of the late duke, encircled by a magnificent wreath of choice flowers and ferns, and from the roof hung the Union Jack half-mast high, with the pole draped in crape.

Principles More than Parties.—At a recent important political meeting one of the principal speakers paid a high tribute to the watchmakers' patron, remarking that a man best served his country who served his constituency first. Captain Penton had greatly assisted the Government to pass the Merchandise Marks Act, whereby the forging of foreign watches and clocks for Clerkenwell goods had been prevented, and there had consequently been a revival in the Clerkenwell watch and clock trade which was most marked. These sentiments were echoed by the other speakers.



Messrs. P. Vaughton and Sons, of Birmingham, have just supplied 300 jewels to the stewards and patrons of the ball given in aid of the funds of the West Lancashire Masonic Educational Institution at Liverpool. The stewards' jewels are in gilt and enamel, and the Mayor's and lady officials are of 15-carat gold and enamel.

The jewel, of which we give an illustration, consists of the square and compass surmounted by the Royal Crown, and bearing the Royal Arms in its centre. On the ribbon, which is enamelled blue, are the initials of the institution, W.L.M.E.I. The Royal Arms and Crown are enamelled in correct heraldic colors, and the jewels are suspended to the bars by ribbons of light and dark blue silk.

On February 23rd, Mr. J. W. Tonks, the well-known member of the firm of Messrs. Bragg, whose artistic productions are so often described in these columns, will give a lecture at the Society of Arts on the "Artistic Treatment of Jewelry, Jewel and Address Caskets." Readers are also well aware of Mr. Tonks' ability as a lecturer on Art Jewelry, and may therefore expect something good.

Measuring Millionths of a Second.

If one takes up the early volumes of the Proceedings of the Royal Society, the first thing that strikes a watchmaker or jeweler is the number of papers devoted to the various questions connected, both directly and indirectly with chronometry. Especially is this so just before the time when John Harrison walked over the heads of his masters. In a few years after the settling with the longitudinarian, chronometric subjects fell once more into oblivion. Lately, however, at least one F.R.S. has been bringing before the public the question of time and time measuring; this being the subject chosen by Professor C. V. Boys, F.R.S., for the Christmas Juvenile Lectures at the London Institute. But the revolutions of planets in either direction were operations too slow for the professor; and it was principally with motions of infinitely greater velocity that were the subjects of his chronometry—velocities, indeed, that moved at rates up to millionths of a second!

Amongst other experiments performed before the audience was the measuring the flight of a bullet, which was performed as follows:—The bullet in its flight was made to cut two wires—one at the muzzle of the barrel, and the other 6 ft. distant. These were attached to electro-magnets in connection with the main apparatus, which, roughly speaking, consisted of a carriage running on wheels and worked by a powerful spring. The pistol went off, and immediately afterwards Professor Boys triumphantly displayed, by means of the familiar lantern and screen, a smoked glass on which the apparatus had recorded its work. The points at which the wires had been broken were marked by a breakage in the two straight lines traced by the electro-magnets, and the distance between these two breaks represented the time which the bullet had taken to travel the 6 ft. The question arose how that period was to be discovered. But beside the two magnets, a tuning-fork was also attached to the carriage, and this tuning-fork, when agitated, vibrated 1,000 times a second. The vibrations were recorded by a zigzag line on the glass, and just eight of the zigzags represented the distance marked by the magnets. This showed that the bullet travelled the 6 ft. in 8-1,000th of a second, or 750 ft. in a second. With great care, experiments could be made to the tenth-part of one of these zigzags, or to the 10,000th part of a second, and that was the smallest time which could be determined with certainty by means of any mechanical apparatus. But even this fraction of time, small as it might seem, was very large compared with those they had to deal with in optical and electrical science. What must be done, for instance, to measure such a space of time as the millionth part of a second? It was done by means of what was known as the revolving mirror, which was capable of being driven at the rate of 800 times a second. An electrical spark of the 25,000,000th-part of a second's duration had been measured by this means. But the sparks he was using were longer than that, and could be used for photographing. He had some photographs of a soap bubble taken by Lord Rayleigh, in which it could be seen precisely what the bubble was doing when it burst. This was not so extraordinary after all, for it only burst at about thirty miles an hour, or 45 ft. a second. But he had some more wonderful photographs of a bullet travelling at 1,000 ft. a second. The professor then exhibited on the screen several photographs of a bullet in its flight, taken by means of a spark which it caused in passing between two wires, and which produced a bigger spark. In one the wad of the bullet was seen travelling just behind it, in another it was still attached. The professor, in conclusion, turned his attention to tuning-forks, of which he had a large collection, and observed that the very smallest, which was felt rather than heard when set in motion, vibrated at the rate of 40,000 times a second!

Description of the Mace for Burslem.

A very fine silver gilt mace is about to be presented to the Borough of Burslem by Alderman T. F. Wood. The order was entrusted to Messrs. T. and J. Bragg, of Birmingham (through Mr. S. Marston, of Burslem), who, needless to say, have carried out the work in the very best manner. The mace is nearly 4 ft. in length. At the top is the Maltese Cross and the Royal Mound. The four arches of the crown part of the mace rise up round a vase-shaped centre, which supports them. The Royal Arms occur on the cover of the vase portion, from which the arches rise. The vase part of the head is divided by Gothic canopies, below which come on the obverse, the arms, crest, and motto of Burslem, with laurel and oak wreaths on either side, and the Portland vase in the arms has been executed with great care. The Royal Arms are on the reverse. On the one side of the Borough Arms is the St. George's Cross, and on the other the arms of the County of Stafford, surmounted by the Staffordshire knot in the form of a ribbon, with the Borough motto "Ready" upon it. All the arms are finely enamelled in the proper heraldic colors. In the fillet there is an interesting variety caused by the Staffordshire knots, also bearing the motto "Ready," appearing alternately between the gems. Below, and in several knops on the mace, is given the fluted ornament similar to that on the Wedgwood vases, for which the neighbourhood of Burslem is celebrated. The fillet is encircled by an alternate series of Maltese Crosses and *fleurs de lis* similar to those on the Royal Crown. Below the head appear three griffins, also bearing the arms of Burslem. There are four ornamental knops. On the upper side of those at each extremity of the mace there is a wreath of oak; on the lower side are various other decorations, one having an enamelled band, bearing the inscription "Borough of Burslem" in gilt letters. On the largest knop there is a charming inward curve of a Renaissance vase, in the upper portion of which is an enamelled monogram of the donor and wreath; on the reverse is the inscription: "Presented by Alderman Thomas Francis Wood to the Mayor, Aldermen, and Burgesses of the Borough of Burslem, January, 1892." A series of elaborate ornaments are shown upon the columns of laurel wreaths and anthemion, with Staffordshire knots and Tudor roses. In the upper portion of the column are four wreaths, having alternately the letter "B.," the initial of the town, and copies of the Union shield of Britannia as it is depicted on the coin of the realm. One of the middle divisions of the column is partially covered with elaborate floriated ornament, leaving spaces filled with panels in *repoussé*, indicating the various industries of the place and the surrounding district—as the head-gear of a coal mine; the potter's wheel and furnace; the Portland vase; mining implements, and emblems of husbandry. The mace is enclosed in a handsome oak case, and will be on view at the establishment of Mr. Marston for a few days after the presentation.

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On the day of the Prince's funeral, most of the Jewelers' shops in London were closed for at least several hours, and many for half the day. The same was the case in many country towns. Nothing since the death of the Prince Consort has cast such a reign of gloom around.

The New South Wales "Protection."

ALTHOUGH politics usually are not considered to fall within the province of a Trade journal, there are certain questions which so materially concern and effect one's business, as to be not only grave, but even vital. Such questions undoubtedly fall within the absolute duties of a Trade journal. Of this class is the now much-debated "protectionist" policy of New South Wales, which endeavours to shut out our goods from one part of our Empire. That there is many a slip between the cup and the lip ought to be kept in the mind of all its advocates. On the occasion of Mr. Reid's motion censuring the "protectionist" policy of the Government, it became evident that although the motion was not quite carried, there is by no means that unanimity of opinion on the subject that might perhaps be imagined—the majority being only eight; 138 members out of 141 taking part. The speech of Sir H. Parkes, too, we consider worth reproducing. He said that he for one was as much in favor of federation as ever, and he would do the utmost in his power to forward it. He would do all in his power to bring about a union of the colonies, and this Government were going to raise a barrier on the road of union by imposing these duties. People did not want these duties. Manufacturers did not want them—they wanted Free Trade and the markets of Australia open to them. They did not want duties on goods from other colonies, which would destroy the chance of union. If the Government passed their proposals through Parliament, he said, in the name of the people outside, they would not submit to them. They would fight to the end to defeat them. He should consider it his duty, if the resolution was defeated, to oppose the proposals of the Government in every way. They ought to have waited for a more convenient season. He did not want to embarrass the Government. He had no hand in Mr. Reid's resolution, but he wanted to do what was right. Only when forced into it would he feel it his duty to oppose them. He could not understand the position of his friends on the Opposition benches. He had been forced to retire, but it was not necessary for them to elect a pirate in his place. Sir Henry Parkes made this remark amidst yells and cries of "Shame." Continuing, he said it was not necessary to elect a man in his place who was a most deadly enemy to the greatest part of their political policy, and who had done his utmost to render abortive whatever the party had achieved. Allowing for defections on the fiscal and other issues, the "real" Labour party consists of twenty-seven members. Of these, seventeen voted for Mr. Reid's motion, and ten against. Mr. Reid affirms that the Opposition only lost the day on the want of confidence motion through the treachery of several of the Labour members, who before the division had signed a pledge to vote for him, but who voted for the Government when the time came.

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Our Unwrought Materials.

FOSSIL PEARL OYSTERS.

The French Minister at Mexico sends an interesting and somewhat curious report stating "that vast deposits of fossil pearl oysters have been discovered in the State of Chihuahua on the banks of the River Couchos, which may be easily worked. A company has acquired 'the find' for the purpose of exportation to the United States." Now when we bear in mind the distance of this State from the Gulf of California, it appears probable that the shell in question may in reality be fossil. Being on the bank of a river may only mean that the stream has cut through the older deposit, and so laid it bare. It is true the aviculidæ are amongst the aristocracy of our bivalves, appearing at a very early date; but we think, however, they are now enjoying their maximum development of size, and that going backwards in Time they get much smaller. It will be very interesting to know more about them. We are, however, afraid that fossil shell will be of little use in the Arts, judging from the fossil pearls in our own collection, which date from early secondary times.

THE IMPORTANCE OF METALLURGICAL SCIENCE.

At the last dinner of the old students of the Royal School of Mines, Professor Roberts-Austin in replying to the toast, "The Mining and Metallurgical Industies," remarked, "If the thousands of tons of steel in the Forth Bridge had contained two-tenths less carbon, the material would have been worthless, that thousands of tons of copper would be useless if it contained a trace of bismuth, and eighty millions sterling of gold coin which Sir C. Fremantle had been responsible for would have crumbled away if it had contained one-tenth per cent. of lead." Assuredly metallurgy is the most important of the sciences.

AMERICAN PEARLS.

Fifteen fine pearls were recently taken out of a New Jersey river, which are claimed to be of exceptional quality and value, surpassing previous finds. There are also new discoveries in Wisconsin. It is estimated that within the limits of one township last summer over 100,000 dols. worth were found on the banks of the Sugar River. Many of these are now finding their way into the European markets, where they are commanding high prices. As we have previously pointed out, for range of hue-suite they stand unapproached, occurring in every possible hue. Although we have been a great admirer of the diversity of hues of the shells (and necessarily of their pearls) of the family that produces them, there are certain features of the ocean pearls—whether of the Meliagrina or any of the Aviculidæ—which immediately distinguish them from fresh-water productions. There is a difference in the "orientation" of the "skin," which is not only altogether different microscopically, but is evident to the unassisted vision. There is further that characteristic of "hammering" so well known which is essentially of oceanic origin; and it may be that, with the keen competition by the Unionidæ, this feature which is so distinctive, may become very much more appreciated, and "hammered" pearls more eagerly sought after and command a higher price in the future.

GREEN MEXICAN ONYX.

Amongst the various hues of Mexican onyx one of a beautiful shade of green was discovered some time ago at the Ozark Mine. Following up the quarrying at the spot has resulted in the discovery of a vein of the same color. Some very large slabs of this lovely hue have now been extracted, and will shortly be on the market.

A REMARKABLE TOURMALINE.

A beautiful specimen of unusually large size of this gem, of a fine green color, was recently found in the mine of the Mount Apolite Mineral Company, near Minot, Maine. Although Maine has long been celebrated for its beautiful tourmalines, this appears be an exceptional one, and was valued at 1,200 dols.

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The recent advance in the prices of watch glasses is to be attributed to the fact that a union has now been formed by those large houses who, until recently, have been cutting each other's throats. It cannot be denied that it is a standing disgrace to us that we do not manufacture watch glasses in this country, where we have such a supply of fine material, and have always been noted for fine glass.

A Standard of Time for the World.

(Concluded from page 77.)

WITH these objects in view, a map has been prepared which shows the position of the 24-hour meridians, and indicates, in a general way, the country or section of country to which any particular hour-meridian has greatest proximity. It would greatly advance the unification of time throughout the world, and promote the common good of mankind, if every nation, with all convenient speed, would take means to select the hour-meridians on which its reckoning of time may be based. To show that England is somewhat behind the times, I may mention that at the last Session of Parliament a Bill was introduced by a private member on petition of the Canadian Institute and others, with the object of permitting and legalising the new system of reckoning time; but the matter being little understood the Bill was withdrawn. Now that the principles of the system are set forth in a memorandum which is endorsed by the highest authorities in the service of the Home Government, and the Home Government has seen fit to bring the matter to the attention of the Dominion Government, I would respectfully recommend that a Bill similar to that introduced last Session be again presented, this time as a Government measure. This would not compel the use of the new system, but merely permit and define it. The preamble of the Bill introduced into the Senate of Canada, 1890, sets forth that—"Whereas on the invitation of the President and Congress of the United States of America, an International Conference was held at Washington in 1884, consisting of duly-appointed delegates from twenty-five nations, at which Canada was duly represented, to determine certain leading principles, by which the inhabitants of the world could have a common system of reckoning time; and whereas the said Conference, after prolonged deliberation, unanimously passed resolutions embodying the principles which should govern all nations as to the measurement and rotation of time, and recommended the meridian passing through the Royal Observatory at Greenwich, England, as a prime or initial meridian for the purpose of a Time-Zero; and whereas the "Hour-Meridian System," commonly called Standard Time, now in general use in Canada, and the 24-hour notation employed in operating the Government railways of Canada, and the Canadian Pacific Railway from Lake Superior to Vancouver, are in harmony with the said resolutions and recommendations of the said International Conference; and whereas petitions have been presented to Parliament, urging that it would be in the general public interest to have these reforms in the measurement and notation of time legalised and sanctioned by Parliament; and whereas since the general adoption throughout Canada of the mode of reckoning known as Standard Time, doubts have arisen as to the reckoning which has force in law, and it is expedient to remove all such doubts; Therefore Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—I. 'In so far as Parliament has power to define and control the same, time throughout Canada shall be reckoned in accordance with the hour-meridian system, commonly called standard time: the system of hour-meridians throughout Canada shall be based on the initial or prime meridian which passes through the Royal Observatory at Greenwich; and the reckoning of time throughout Canada shall be in agreement with the reckoning of civil time at Greenwich, excepting only with respect to the commencement of the day and the notation of the hours, which shall be hereafter provided: in all other respects the division and subdivision of the day into hours, minutes, and seconds in Canada shall be synchronous with the division and subdivision of the day at Greenwich. II. The commencement of the day, and the notation of the hours, in the following provinces and territories of Canada, shall differ from the commencement of the civil day at Greenwich, and from the notation of the hours of Greenwich civil time as follows: (*a*) Prince Edward Island and Nova Scotia shall be four hours behind the civil time at Greenwich—that is to say, when it is four by the clock in the morning at Greenwich the day shall commence throughout Prince Edward Island and Nova Scotia; and when it is twelve by the clock at Greenwich it shall be eight by the clock throughout Prince Edward Island and Nova Scotia. (*b*) New Brunswick, Quebec, and Ontario shall be five hours behind; Manitoba, six hours; and so on with the provinces. The governor in council may from time to time make regulation for other territories."

Mr. Evarts introduced a Bill in the Congress of the United States in January, 1891, respecting the reckoning of time: "Whereas an Act was passed in 1882 to authorise the President of the United States to call an International Conference to fix on, and recommend for universal adoption, a common prime meridian, to be used in the reckoning of longitude, and in the regulation of time throughout the world." The conference was held at Washington in 1884; twenty-five nations were represented by duly-appointed delegates. Resolutions were passed embodying the principles which should govern the measurement and notation of time, and it was recommended that the meridian should pass through Greenwich as the prime meridian of all nations. The "hour-meridian system" was also approved, and is now in general use in the United States. The principle generally assented to, the hour-meridians, which constitute the sub-standards for universal time-reckoning, would be numbered as follows:—

Anti-prime meridian 180° east and west from prime meridian "Zero."

Hour Meridian	165° East Long.	numbd.	1	Unus
,,	150° ,,		2	Duo
,,	135° ,,		3	Tres
,,	120° ,,		4	Quatuor
,,	105° ,,		5	Quinque
,,	90° ,,		6	Sex
,,	75° ,,		7	Septem
,,	60° ,,		8	Octo
,,	45° ,,		9	Novem
,,	30° ,,		10	Decem
,,	15° ,,		11	Undecim
,,	0° Prime Merid.	numbd.	12	Duodecim
,,	15° West Long.	numbd	13	Tredecim
,,	30° ,,		14	Quatuordecim
,,	45° ,,		15	Quindecim
,,	60° ,,		16	Sedecim
,,	75° ,,		17	Septemdecim
,,	90° ,,		18	Octodecim
,,	105° ,,		19	Novemdecim
,,	120° ,,		20	Viginti
,,	135° ,,		21	Viginti unus
,,	150° ,,		22	Viginti duo
,,	165° ,,		23	Viginti tres

Anti-prime meridian 180° east and west longitude "Zero."

At the annual meeting of the Special Committee on Uniform Standard Time of the American Society of Civil Engineers, January 21st, 1891, it was brought to the notice of the society that the Government of the United States had not taken any action on the resolutions and recommendations of the International Conference held in Washington in 1884, and that as standard time so universally adopted in civil life throughout North America is in complete accord with the resolutions of the conference, it would be in the public interest to have the recommendations authoritatively recognised by Act of Congress. The committee submitted a detailed statement, establishing that a majority of railway managers in the United States and Canada were in favor of the 24-hour notation, viz.:—1. Presidents, vice-presidents, and general managers, 135; 2. General superintendents, 77; 3. Superintendents, 114; 4. General traffic managers, 12; 5. Engineers, 65.

Gazette.

Bankruptcy Record.

Cohen, Lawrence (trading as Cohen and Company), 48, Hatton Garden, London, E.C., Watch Material Dealers. First meeting: Jan. 5, 1892. Public examination: 34, Lincoln's Inn Fields, Feb. 3, 1892.

List of Principal Creditors—

		£	s.	d.
Breakspear, J. E.	London	45	16	2
Blanckensee, J. S.	,,	63	7	4
Cohen, S.	,,	70	0	0
Cohen, Mrs. F.	,,	250	0	0
Eder, M.	,,	500	0	0
Haller, T.	,,	85	4	2
Judda and Co.	,,	258	2	10
Lauffer, C.	,,	41	13	6
Myers, M.	,,	394	15	8
Pitchi and Gunther	,,	85	12	0
Rey and Son	,,	55	17	3
Rasmussen, Webb, and Co.	,,	196	16	7
Weill, L., and Co.	,,	287	8	8
Woolf, L.	,,	463	6	10
Woolf, M.	,,	240	0	0
Armstrong, B. C.	Birmingham	56	15	0
Booth and Son	,,	40	15	7
Booth Bros.	,,	46	2	9
Benton, H. H.	,,	48	12	0
Cox Bros.	,,	141	0	0
Hands and Son	,,	111	17	0
Levetus, E. M.	,,	48	1	0
Male and Jones	,,	96	0	0
Tanndy and Rudge	,,	54	9	0
Hawley, J., and Son	Coventry	118	0	6
Allan and Lawler	Dublin	450	0	0
Batt, J.	Sheffield	108	13	0
Richardson, W.	,,	92	14	2
Usher, William	Swansea	507	4	0

Partly Secured Creditors.

		£	s.	d.
Merzbach, Lang, and Fellheimer ...	London	309	7	0
Perrier, M. A....	,,	210	17	1
Allann, Mrs.	Dublin	183	7	8
Liabilities on bills	... ...	3,342	11	1

Cohen, Hyman, 20, Trafalgar Street, Leeds, Jeweler. Adjudication: Jan. 13. First Meeting: Jan. 29. Public Examination: County Court, Leeds, Feb. 9.

Dickinson, William Richard, 20, Manchester Road, Burnley, and **Dickinson**, Charles George, 19, Carr Road, and 26, Manchester Road, Nelson, formerly trading as W. and C. Dickinson, 20, Manchester Road, Burnley, and 26, Manchester Road, Nelson, Watchmakers, Gold and Silversmiths, and Jewelers. Adjudication: Dec. 19.

Feran, Stephen, Jeweler, late 15, Victoria Square, Whitby, now 28, Summer Hill Terrace, Birmingham. Adjudication: Jan. 6. First Meeting: Jan. 19. Examination: County Court, Birmingham, Feb. 4 at 2.

Kleiser, Anthony, 55, Oxford Street, Reading, Berks, Watch and Clock Maker.

List of Principal Creditors—

		£	s.	d.
Fehrenback, M.	London	165	0	0
Little, J.	,,	28	0	0
Silverston and Co.	Birmingham	48	18	0
Holmes, J. J.	,,	43	14	3
Lewis Bros.	,,	23	11	0
Usher, W.	Reading	36	0	0
Kleiser, M. L....	,,	41	0	0
Burkle, Joseph	Schonenback	30	0	0

Lewis, John, 39, Ynyshir Road, Ynyshir, Jeweler. Receiving Order and Adjudication: Dec. 24, 1891.

Moore, John Thomas, 120, Preston New Road, and 19, Northgate, Blackburn, Lancaster, Watchmaker and Jeweler. Adjudication: Dec. 29, 1891. Receiving Order: Dec. 7. First Meeting: Jan. 6. Examination: Jan. 6.

Rosenthal, Clara, trading as J. **Rosenthal** and **Son**, 58, Swan Street, and 320, Cheetham Hill Road, Manchester, Wholesale Jeweler, widow. Receiving Order and Adjudication: Dec. 15. First Meeting: Ogden's Chambers, 97, Bridge Street, Manchester, Jan. 7, 1892, at 3. Public Examination: Court House, Manchester, Jan. 20, 1892, at 11.

List of Principal Creditors—

		£	s.	d.
Maas, Charles	London	145	0	0
Maas, C., Mrs....	,,	84	0	0
Allday, Henry and Son	Birmingham	118	17	6
Aaron, D. I., Mrs.	,,	80	0	0
Emanuel, Alfred	,,	70	10	0
Emanuel, Elias	,,	62	2	6
Goldsmid, M. J.	,,	80	0	0
Griffiths, A. G.	,,	34	6	6
Page, Edwin...	,,	98	1	6
Michaels, M.	Cheetham	471	2	0
Hawley, John and Son	Coventry	478	17	7
Hill, Thomas and Co.	,,	175	0	3
Wright, L. I.	Manchester	700	0	0
Mercier, E.	Paris	79	9	0
Bankers' Claims	... ...	441	0	0

Fully Secured Creditors.

		£	s.	d.
Sechel, Leon, and Co.	London	2,000	0	0
Liverpool and Investment Building Society	Liverpool	175	0	0
Deakin, Colonel (Executors of) ...	Manchester	4,000	0	0

Partly Secured Creditors.

		£	s.	d.
Emanuel Bros.	Birmingham	2,055	0	0

(Estimated value of Security, £50.)

Preferential Creditor—

		£	s.	d.
Deakin, Colonel (Executors of) ...	Manchester	20	0	0

Skerritt, Robert, High Street, York Town, and 3, Kelsey Cottages, Blackwater, late 168, Stamford Street, Blackfriars, Watch and Clock Maker, Jeweler, and Optician. Receiving Order: Jan. 9.

Taffinder, Frank, 40, High Street, Rotherham, Watchmaker and Jeweler.

List of Principal Creditors—

		£	s.	d.
Little and Co.	London	36	0	0
Stauffer, Son and Co....	,,	43	1	0
Blanckensee and Co.	Birmingham	80	0	0
Constantine and Floyd	,,	32	15	9
Loveridge Bros.	,,	20	0	0
Foster, —	Manchester	20	0	0
Ingleby, Jos.	,,	193	0	0
Chrimes, R.	Rotherham	298	0	0
Taffinder, A.	,,	120	0	0
Fully Secured Creditor	... ...	40	0	0

Administration Order.

Bellamy, George, 33, Norfolk Street, East Wisbeach, Cambridge, £38 15s. 0d., Watchmaker. Twenty-one Creditors. Dec. 15. No. 5.

Deeds of Arrangement.

Abbatt, John Joseph, 15, Stricklandgate, and 32, Stramongate, Kendal, Westmoreland, Watchmaker and Jeweler. Trustee: Tom G. Thompson, 51, Highgate, Kendal, Accountant. Deed of assignment of personal estate, including a contingent interest in a sum of £200, payable on death of debtor's mother (he surviving). Dated Jan. 11th; filed Jan. 13th; unsecured liabilities, £360 19s. 8d.; estimated net assets, £116.

Cooke, C. E., 92, Paradise Street, and 43, Claremont Road, Liverpool, Wholesale Jeweler, Importer of Clocks, Watches, etc. Trustee: S. T. Rogers, North John Street, Liverpool, C.A. Dated Dec. 8th; filed Dec. 15th; unsecured liabilities, £1,169 7s. 6d.; estimated net assets, £370.

List of Principal Creditors—

		£	s.	d.
Michael Bros.	London	32	3	0
Perrier, M. A.	,,	88	8	0
Britton, B. H., and Sons	Birmingham	41	19	0
Collins, Charles H.	,,	25	3	0
Levetus Bros.	,,	380	0	0
Pearce and Thompson	,,	39	4	1
Pindleton and Sons	,,	32	19	9
Rolason Bros.	,,	26	6	2
Hawley, John, and Son	Coventry	24	12	0
Smyth, J.	Liverpool	22	7	0
Wright, L. J.	Manchester	137	14	0
Mather, Mrs. E.	,,	40	0	0
Wigfall, John, and Co.	Sheffield	44	6	8

Ferguson, Mathias Valentine, Sugar Island, Newry, Armagh, Watchmaker and Jeweler. Petition for arrangement. Dated Dec. 30th, 1891; filed Jan. 4th, 1892; unsecured liabilities, £132 19s. 8d.; estimated net assets, £150.

Kuner, Isidor, 52, Taff Street, Pontypridd, and High Street, Cowbridge, Glamorgan, Watchmaker and Jeweler. Trustee: George G. Poppleton (Poppleton and Appleby), 26, Corporation Street, Birmingham, C.A. Secured creditors, £350. Dated Jan. 2nd; filed Jan. 8th; unsecured liabilities, £1,095 2s. 4d.; estimated net assets, £1,399 1s. 3d.

List of Principal Creditors—

		£	s.	d.
Bayliss, Gilles, and Co.	London	60	10	9
Cooper, H. J., and Co.	,,	33	11	0
Demier Bros. and Co.	,,	63	0	6
Holmes, W. J.	,,	257	1	4
Widmer and Co.	,,	42	16	6
Austin and Steeley	Birmingham	56	17	11
Ahronsberg Bros.	,,	34	1	4
Breholz, D.	,,	40	6	3
Brockington Bros.	,,	32	16	0
Needham, T.	,,	46	15	4
Wallis, G. and T. E.	,,	45	8	2
Nichins Bros.	Bristol	23	0	5
Pearson, T., and Son	Coventry	20	0	0
Briggs, W., and Co.	Sheffield	73	14	3
Bankers' Claims		50	0	0

Robinson, Moses, 31, Broad Street, Hanley, Stafford, Dealer in Jewelry. Trustee: Solomon Hillner, 130, Bristol Road, Birmingham. Dated Dec. 22nd; filed Dec. 29th; unsecured liabilities, £267 15s. 9d.; estimated net assets, £314 16s. 2d.

Stone, George, 182, Worcester Street, Bromsgrove, Worcester, Watchmaker and Jeweler. Trustee: F. E. Wattis, Lower Temple Street, Birmingham, Factor. Dated Jan. 2nd; filed Jan. 4th; unsecured liabilities, £131 5s. 8d.; estimated net assets, £45.

Notices to Creditors.

Edgcombe, James, 65, George Street, Plymouth, Jeweler. First and final dividend of 8s. $11\frac{1}{4}$d., at F. W. Dawe, Hick's and Company, Wilts and Dorset Bank Chambers, Plymouth Jan. 14th.

Fehrenbach, Pius, 21, Solway Terrace, and 11, Brown's Lane, Carlisle, Watchmaker and Jeweler. First and final dividend of 2s. $1\frac{7}{8}$d., at Official Receiver's, Carlisle, Dec. 30th, 1891.

Hoddell, James (deceased), late Chapel Fields, Coventry, Watch Manufacturer. Supplemented dividend of $4\frac{1}{10}$d., at Official Receiver's, Coventry, Dec. 15th, 1891.

Keyzor, George Benjamin, 39, Hatton Garden, Holborn, London, W.C., Clock Manufacturer. Proofs for intended dividend by Jan. 30th. Trustee: E. L. Hough, 33, Carey Street, W.C.

Myers, Joseph, 14, (formerly known as 5) Duke Street Aldgate, and 13, Salisbury Road, Dalston, Wholesale Optician and Jeweler. Second dividend of 1s. 5d., at Hasluck and Co.'s, 17, Holborn Viaduct, E.C., C.A., Dec. 7th, or any subsequent Wednesday.

Paul, Charles (trading as Armstrong, M., and Company), now or late of 15, Grosvenor Terrace, Latchford, and Bewsy Chambers, Warrington, both Lancaster, Jeweler. First and final dividend of 2s. $6\frac{1}{11}$d., at Ogden Chambers, Bridge Street, Manchester, Jan. 7th.

Young, George Herbert, 129, Somers Road, Southsea, Watchmaker and Jeweler. First and final dividend of 1s. 9d., at Official Receiver's, Portsmouth, Dec. 22nd.

Dissolutions of Partnerships.

Blackburn and Rasmussen, 15, Rupert Street, Haymarket, Manufacturing Silversmiths, Jan. 8.

Coleman and Tammadge, 4 and 5, St. Augustine's Square, Bristol, Pawnbrokers and Silversmiths. Dec. 31, 1891. Debts by George Tammadge, who continues under the same style.

Fullerton, Duncan, and Shearer, 13, Royal Exchange, Glasgow, Wholesale Silversmiths and Electro-Platers. Dec. 31, 1891. Debts by Duncan Fullerton, who continues in his own name.

Kay, Jones, and Co., 4, Foregate Street, Worcester, Wholesale Jewelers, Watch and Clock Manufacturers, Silversmiths, Watch and Clock Factors, General Dealers, and Club Proprietors. Dec. 31, 1891. Debts by William Kilbourne Kay.

Marshall, W. and Co., 134, Princes Street, Edinburgh, Jewelers, Silversmiths, and Watchmakers. Dec. 31, 1891. By retirement of John Dalrymple Marshall. Debts by Thomas Rymer Marshall, who continues under the same style.

Myers, John and Co, 131 and 135, Westminster Bridge Road, Watchmakers and Jewelers. Dec. 30, 1891. Debts by Henry Myers, who continues under the same style.

APPLICATIONS FOR PATENTS.

(*Expressly compiled and contributed for this Journal by* Messrs. W. P. Thompson and Co., Patent Agents, 6, Bank Street, Manchester; 6, Lord Street, Liverpool, and 323, High Holborn, London, W.C.)

21,309.—"Improved long-range barometer," J. Joly, Dublin, 7th December, 1891.

21,704.—"Improvements in the construction of telescopes for use with surveying and other instruments," W. Wilson, London, 11th December, 1891.

21,403.—"Improvements in means for illuminating clock dials," J. Chew, Birmingham, 8th December, 1891.

21,794.—"An improved method of setting diamonds and other stones for cutting purposes," F. Kegel, London, 12th December, 1891.

21,681.—"Improved locking stud or clasp for attaching collar to shirt and such-like purposes." J. X. Ganz and J. W. McKnight Parsons, Swansea, 11th December, 1891.

21,694.—"Improvements in binocular glasses," M. Neuerburg, London.

21,889.—"Improved lock or fastening for bracelets and other articles," G. E. Lancelott, London, 15th December, 1891.

22,032.—"Fastening device for bracelets and the like," A. Mürrle, London, 16th December.

22,808.—"An improved calendar clock," T. Haycock, Derbyshire, 31st December.

* * *

Prof. Marey contributes an interesting article on Chronophotography as applied to moving objects to the *Revue Générale des Sciences*, a translation of which appears in *Nature*, of January 7th. This essay details methods employed, which were not the same as those of Mr. Muybridge. It is unnecessary to remark that all vendors of photographic instruments should keep themselves acquainted with what is being done in the world for which they cater.

The Watchmaker, Jeweler and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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The Evolution of the Address Casket.

THE paper read the other evening by Mr. J. W. Tonks at the Society of Arts, which we reprint in full elsewhere, is one of very great interest, and consists of extremely valuable and useful information. This has been acquired by many years of careful study and research, although we cannot help remarking that had the esteemed lecturer applied the same historic criticism to his prototype of the address casket—the Bezabel-Aholiab ark—he would not have made use of unqualified assertions in connection with it. Nor would he have referred to the *thin* poles by which it was carried palanquin fashion if he had for one moment attempted to estimate the weight of gold in the two cherubim alone, each of which were made out of *one piece of gold*, and of such dimensions that the bodies and wings extended over a space, the base of which was a minimum of forty-five inches. A moment's reflection must show such a masterpiece to have weighed tons! Nor do we think the proportions $2\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ can be claimed for the Greek ratios. One instance this moment in our minds does not support it, when

> Behind (Penelope) her train the polish'd coffer brings,
> Which held th' alternate brass and silver rings.

The proportions are altogether too square and ungraceful for Greek.

There is one thing, however, in connection with this prototype, and that is the casket function has been retained with sufficient integrity to justify its selection. The ark, or chest or coffer, in Hebrew and Greek (ἀρκεῖν, to keep off) means, of a place of safety, and *as such* it has been used from the very earliest times; and just as in the case of the evolution of the palace from the cave, so the environment of the casket has modified its structure, and the kind of treasure it was intended to preserve has left its mark behind it; whether it was the luxurious gold be-gemmed casket bespeaking the wealth and affluence of Rome, in the preservation of the beard of Nero; or the more humble *encolpia* of the Early

Christian, whose Religious emblems would be more extravagantly represented in the ecclesiastical *chasses* of later date. The flowers of each period of art have been employed to express the esteem in which the enclosed treasure was held, whether it was Indian, Egyptian, Greek, Byzantine, or the enamels of France or England; and as we trace the casket through the ages we find it becoming more and more associated with its contained treasure. It is gratifying to see that Englishmen who are sometimes said to be less lovers of their country than those of the other three divisions of Great Britain, have been the first to encase in gold, as their greatest treasures, the certificates of their citizenship in the sea-girt Isle. Such, we consider to be the simple history of the evolution, and the definition of the function of the ideal casket of to-day; a monument of our art, a record of our nation to those who shall come after us—a volume which shall speak through the ages of the honor that we showed to our great, our noble, and our good.

But unfortunately there are elements in the environment of the casket to-day conducive not only to retrogade metamorphoses, but even to its dying out in a short time hence. As we admiringly gaze on the examples of the past we are struck, at first sight, with the profundity of leisure they bespeak. There is no sign in them of the everlasting full gallop, steam or electric speed, marked on every action of to-day. There is no stinting of material to try to make up some of the loss occasioned for the purpose of competing with a brother craftsman in obtaining the subjective advantages arising from advertisement. Alas, no! the conditions are indeed different. In bygone days the artist sat to his work with his love-guided fingers; time was secondary, pains not thought of—achievement was his goal. Compare with that a to-day-born casket, and the conditions under which it is ushered into existence. A city becomes aware that in two or three months' time a man whom they would like to honour will be in their midst. A great part of the intervening time will be wasted upon the to be or not to be—a casket. At last the time is drawing nigh, and it is decided there shall be one. A committee may be appointed to carry it out, or the choice may be left to the whole corporation. Invitations are immediately sent out, couched in words of greatest haste and hurry, to a number of jewelers. Upon receipt of intimation the jeweler calls up the designer, and gives him his instructions something after this style: "Now, Smith, here is a casket order, and we must get it. It's for Baron Northpassage, the great African explorer. He was born at House-in-the-Wood. I don't know much about him or the place, but you must find it out and let me have the sketch by Wednesday morning, as the council meet that day at twelve o'clock." The next twenty-four hours are spent in getting together the heraldry of the self-made man—the archæology, the legends, and the associations of the city: its arts, its industries, and history. And from the labyrinthian mazes of this hetrogenious conglomeration a new creation is begotten, which shall successfully compete with a half-a-dozen or more other competitors in producing the maximum show for the minimum cost, and please the majority of a council of men, not one of whom perhaps have even seen a sketch before in their lives. Then comes the trying ordeal of those who have to exhibit and explain the mysteries that are by-and-bye to lie visibly hidden in the production. Councillor number one begins: "Oh Jones! Never heard the name of that firm before; have you ever done any of this work before? Will this be better than the one you say you made for Lord So-and-so? What is gold worth an ounce? How many ounces of gold do you reckon there will be in that? What? Why that will be nearly half profit!" Then follows an explanation that results in showing that the thing will leave but a very small margin—in fact, not pay. "But see the advertisement!" says the civic-tradesman. "I reckon it ought to be worth a hundred pounds to you; but, I say, what's the meaning of that thing at the top?" Then number two, who has often tried to get in a question, insists upon an examination, and so on, till in the end it would be difficult to say who had asked the most irrelevant questions. But let us pause for a moment and ask, even if granted these were a council of the wise men of Greece, how would it be possible for a sketch like this, the work of a few hours, to represent a work of art? At most, it can only be a sketch, the exact result from which it would be impossible to predict, Let the reformation commence in the weakest spot. Let committees be appointed qualified to give advice upon these matters; and there are many of the highest authorities of the day who would only too willingly give their services. Let awards be offered that will tempt men to produce designs, which in themselves shall be works of art, the conception of months of travail. "In times of peace prepare for war," says the adage. In the same manner a city might always have a suitable design on hand which, with the filling in of a few blank spaces, would identify it with the recipient.

New Imitation Turquoise.

NOT long ago we were shown by way of special privilege a charming colored turquoise of exceptional size, nearly three-quarters of an inch by half an inch, beautifully oval, perhaps a little flat, but it was quite free from blemish, and of a delicate robin's egg blue. We should not like to say how much the gentleman gave for it, but three figures were asked for it, and the otherwise imperturbable merchant gloated over his possession like an Indian. "Did you ever see such a picture?" said he, as he cocked his head slightly on one side to feast upon its beauties. "For Heaven's sake mind you don't drop it!" It certainly looked something to make a fuss about. It had the characteristic soft waxy lustre, the crypto-granular texture, and a color only seen on rare occasions. "Don't take it up," he continued, "for fear of an accident!" "All right," we responded, and folding up the paper, remarked, "don't tell anybody we have *seen* it." "What do you think about it?" "Why, we think what we just expressed; we have not *seen* it, we have only looked at it on the paper. Before we give an opinion we should like to take it in our hands and give it a further examination." "What do you mean? Don't you think it is a turquoise?" "Well, candidly speaking, we don't!" "Not a turquoise? Did you ever see a fine turquoise in your life? Did you turn the stone over and see the little fragments of matrix at the back?" "Well," we remarked, "we don't wish to offend you or hurt your feelings. We saw something at the back which we did not consider matrix." "Don't be a fool, man!" he retorted, and the change of expression that had come over his countenance since his head was cocked admiringly over that stone was a study. "We will endeavour not to be," we responded; "but will you let us look at it and examine it?" "Look at it all you like, but don't get damaging it." And forthwith we began making an examination of it. In the same state of mind now, he interposed, before we had scarcely got it in our hands—well, not exactly—"Ah, I knew you were wrong!" "What, wrong in doubting? Yes, we were; there is no doubt about it." "Did you ever see such a pretty stone?" "Well, we must say it is very pretty, but we always prefer things undyed." "Undyed, man; off again! Do you call that dyed?" "We do. It is nothing more nor less than dyed chalcedony." It is the outcome of the grape jewelry. A demand for those, and the cameo flowers that followed, directed attention to the production of variously-colored chalcedonies with different surface lustres, and this is one of their achievements.

[Since the above was written a specimen has been obtained for Jermyn Street Museum, where it can be seen with the quartz in the horse-shoe case.]

Notes About Town.

The State of Trade. Trade is gradually, although perhaps in some quarters *very* gradually, recovering from the almost hopeless condition into which it was cast by the death of the Duke of Clarence. Things are brightening up again; the Court is moving, and fashionable life is active once more; weddings are taking place, and the accompanying present-making going on.

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The Season's Novelties. Efforts for a spring trade are also appearing, and one sees prominence given to a few articles, and even new objects of attraction occupying prominent places in the windows of the West End. After a year of rest the *date* idea has come again to the front, especially in the form of diamond Roman numerals round a flexible bracelet. There are also numerous designs of 1892 in brooches, some of which are great improvements on the 1890. The revival will help the output of some of the latter with the last figure altered.

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Orchidania. Elated by the success achieved by the numerous varieties of these floral phenomena in gems, their sphere has been extended to silver and E. P. ware, in which case they are produced in magnificent Doulton ware, and employed as butter-dishes, salt-cellars, and numerous other charming and useful articles. Some of the former are beautifully mounted, the leaves and stalks being of silver, and the flower, which forms the dish, of china. In passing through the galleries of Messrs. Atkin Bros., we noticed some further additions of art china ware. One egg-shaped spoon warmer was very handsomely mounted, and we were informed it was meeting with a good sale. While speaking of this important establishment, reference might be made to the fine "old Dutch" *Netsukie*-corked, silver-mounted bottles. These are to be seen in many of the leading West End stocks, and from inquiries we find they are selling very well. We further hear that *single* asparagus tongs—(for holding the single stick) are selling; so also are ham-holders and marrow-scoops. There are also several new ideas in the champagne bottle-holders, and also in ice compartments, in which the ice is not brought into contact with the liquid surrounding it, which it is intended to cool.

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Tortoise-shell "to the Front." Tortoise-shell goods are especially to the front in a hundred forms, bon-bonniers, caskets, brushes, trays, and a host of things, in some of which the size is so large as to suggest the idea of the necessity of the inverted commas. Of course we must leave this matter to the respective vendors. We suppose all know what is meant by Tortoise-shell, and would not knowingly sell an article as such whose claims could not be established to the usual trade term. This makes us ask if people know what tortoise-shell really is; and it might be useful to suggest a visit to the Natural History Museum, where a ramble amongst the chelonia would soon convince one of the impossibility of the articles being the shell of the tortoise.

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Imposing Silver Gilt. We also hear of a great deal more silver gilt being sold, and almost every high-class house is exhibiting a window more or less composed of it, from the large pieces belonging to dinner sets down to sugar-and-creams.

Country Notes.

ALTOGETHER there is not much to grumble at in the Coventry trade at the present. It is true there are no large orders, and things are cut a bit finer, but almost everyone is going steadily along. There is also one great consolation which always has a good effect—people are hopeful and cheerful, and under these conditions new efforts always burst forth, and buds of ideas blossom into full flower. If there is one thing more than another that injures trade all round it is the preaching up of the doleful end of everything in a very near future. Under these conditions men who are really doing well are made to believe *that everything is very bad.*

WHAT a privilege it is to grumble! There are several prominent people now growling because the celebrated Market Hall clock and that of St. John's, Coventry, go so nearly alike, always striking together, that one is unable to count the hours. There is many a large city that cannot boast one good clock. Surely having two is no calamity.

MESSRS. A. and S. HURST, of 34, Union Street, Oldham, owing to the increase of the jobbing trade, have found it necessary to augment their staff, and have now secured the services of a well-known Coventry man to act as manager in the watch repairing department. They have recently added some new and expensive machinery, and are making a speciality of pivoting in all its branches, employing men exclusively on this work. Under the new arrangements they inform us they are able to make some reductions on old prices, and are giving special attention to orders by post.

THE exact state of the Birmingham Scientific and Philosophical trade is not easy to gauge, owing to the confliction of the reports. Several letters we have received report trade as improving, while others, especially barometer and thermometer makers, complain very much. The Spectacle trade, on the other hand, is fairly busy, although not so much so as the Photographic. From the orders on hand, and the growing popularity of amateur photography, it is contemplated that a good season is opening. Nor have Electric Instrument makers much cause to grumble.

IN Sheffield the trade in Cameras is also looking up; but the spectacle trade, especially the lens grinding industry, is not so active.

IN Manchester the trade all round is perhaps not far below the average; in many respects it is above. A new method of extracting oxygen from the atmosphere by the Parkinson process has been patented, and a company formed to supply it in compressed condition in cylinders. These cylinders have now entirely supplanted the cumbersome old-fashioned gas-bags, and are far less liable to accident. Still, for all that, the lantern trade is not so busy as it might be.

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The *Medical Press* in observing "prescribing and advertising opticians are becoming a nuisance in London, and will soon require to be looked after by the Medical Defence Union," brought forward some interesting correspondence on what is being done in this line, and it is more than probable that something will be done by the medical societies to improve our present laws in connection with optical prescribing.

Birmingham Notes.

(By our own Correspondent.)*

WITH the Birmingham watch and jewelry trades February is nearly always a quiet month. The filling up of stocks, which generally gives an air of briskness to January, is of course largely speculative, and the second month of the year is too early to form a definite idea of what the year's trade will be. Hence February operations are tentative and more a matter of feeling the way than downright earnest business. And with the majority of us here the month just ended has been quieter even than usual for February. Not that this is a new development, or indicative of fresh complications. It is simply the natural result of the tendencies noted in last month's remarks. I just now said "the majority of us," advisedly, as there are two or three houses who always profess to be doing big business. No matter how bad things are, or how short of sales other people may be, those I refer to are always fully employed, and always selling large parcels. Of course, I do not doubt their word, and am willing to accept their statements as correct. Still, as a consolation to those who are not quite so fortunate I would add, in confidence, that I am often inclined to take this tall talk as a matter of the "wish being father to the thought." It is, however, a very good fault—this putting of a good face to the front and looking cheerful even under depressing circumstances. In spite of this, I am sorry to say that I cannot alter my verdict on the month as having been an exceptionally bad one.

YET I am a bit more hopeful of the present month. The gloom, I believe, is disappearing, and as the time of Court mourning comes to a speedy end, our trades will soon feel the benefit of the renewed activity of Society life. I cannot say that I anticipate any special results just yet. There will, I am afraid, be nothing startling till after Easter. But what I mean is that the excessive depression will now lift, and we shall do our usual March business.

THE annual dinner of the Birmingham Jewelers' Association—postponed from a previous date—is to be held on the 18th inst. The Right Hon. Joseph Chamberlain, M.P., has promised to be present "if his engagements will permit." This is a big event for the Birmingham trade, and I hope they will not be disappointed, as Mr. Chamberlain's speeches on these occasions for the last two or three years have always been exceedingly interesting. If he addresses us this year we may expect some reference to the Bankruptcy Laws as referring to the special condition of the Jewelry trade.

THE annual *soirée* of Messrs. Payton and Sons, of Vyse Street, came off on the 12th ult. at the Victoria Hall, Aston. This is always an enjoyable and successful evening, and the present occasion was no exception to the rule.

ONE of the most important items of news for the last month is the great robbery of watches, etc., from the premises of Mr. W. J. Holmes, of Hockley Hill. The thieves appear to have got in during Saturday night, and to have spent the Sunday leisurely in ransacking the place. From all appearance they well knew the weak point at which to effect an entrance, and were familiar with the whole run of the place. So far no clue as to their identity has yet been found, nor has any of the goods been recovered.

I NOTICE a splendid new sign in Frederick Street—quite a mammoth among the jewelers' signs, which, as a rule, are small and insignificant. The new firm are bullion dealers and refiners. I have always thought that these departments of our trade were already well and sufficiently done in Birmingham, but I presume there is still room for another business.

OUR Jewelers' Association evidently pride themselves somewhat on their action in the matter of D. Maurice, as they have taken the trouble of having the report of the proceedings reprinted and posted round to the trade, while as a matter of actual fact the case resulted in what was virtually a verdict for the defendant; yet it was equally satisfactory to the prosecuting association, as the vexed question of "Pawning" as a custom of the trade was authoritatively and emphatically settled in accordance with their wishes. The following is the gist of this matter:—"In reply to an observation of counsel, Mr. Commissioner Kerr said that he repudiated the doctrine which appeared to have been laid down in the case of the Queen *v.* Imperiali, and he was of opinion that the pledging of the property under those conditions was a distinct contravention of the 15th sub-section of the 11th section of the Debtors' Act."

I AM glad that this matter has thus been definitely laid down, as the promulgation of the idea that indiscriminate pawning of stock—paid for or not—was not only customary but legal, would of necessity operate seriously to the disadvantage of the trade at large. Especially would it be likely to influence weak and unsteady members to take refuge in a demoralising system; to the equal detriment of themselves and their creditors.

ANOTHER good action of the Association last month was the issuing of a circular giving particulars of the Weights and Scales Acts as relating to our trades. They show the necessity of having both scales and weights properly tested and marked by the authorities. Also they clearly state that Troy weight *is* a legal standard—this being a matter upon which some little doubt seems to have been cast by the prosecutions of jewelers a few months ago.

LAST month was quite an educational one for the jewelers. On February 2nd Mr. J. W. Tonks lectured at the New Church Guild, Handsworth, on "Japanese Art," and on the 23rd Mr. F. W. Goldsmith lectured at the same place on "Art Metal Work." Both these lectures were illustrated by interesting and valuable specimens of the work treated of, and I am told they were both instructive and well worth hearing. Mr. Tonks is a well known and able lecturer on art matters, but I believe Mr. Goldsmith is a beginner in this work.

THE stoppage of a large firm of London merchants has been a serious blow to several of our manufacturing houses here. I am told of two or three who are in for very large amounts. On the other hand, I hear of several who have had large bills run off quite recently, so that the stoppage is evidently due to some sudden and unforseen accident. I understand that it is not due to any difficulties in the jewelry department of the firm, but to great losses in quite another way. This is satisfactory so far, as usually the poor jewelry trade is credited (or perhaps I ought to say debited) with being the universal cause of all monetary misfortunes. I have not heard what they propose doing in this matter, but from what I hear the creditors are greatly in sympathy with the firm. Next month, probably, I shall be able to report some satisfactory settlement.

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent.

Sheffield Notes.

(By our own Correspondent.)*

THE name of Mappin is rather a common patronymic in Hallamshire. Most of those who bear the name are more or less nearly related to each other. In the year 1863 one branch of the family carrying on business in Baker's Hill, as silversmiths, under the title of Mappin Bros., dissolved partnership; two of the brothers, Edwin and Joseph Charles, continuing to trade under the old name, and a third setting up in business as Mappin and Webb. An agreement was entered into between the parties, one of its provisions being an obligation on the part of the third brother not to use the word "Mappin" or "Mappin and Co.," without the association of the term "Webb." Recently Messrs. Mappin and Webb have adapted the word "Mappin" as a telegraphic address, and this the firm of Mappin Bros. regard as an infringment of the agreement in question. The matter has just come before the Chancery Division of the High Court of Justice, and has had a somewhat singular conclusion. One of the defences urged by the defendants was to the effect that "the said agreement has long since been abandoned and treated as altogether at an end." It is hard to say whether this was or was not a slip on the part of Messrs. Mappin and Webb, but in any case the plaintiffs, whose obligations under the agreement were quite as extensive as those of their rivals, seized upon it with avidity, and accepted the freedom offered by the words of the plea. On that footing, therefore, Mr. Justice Romer dismissed the action with costs.

MR. HENRY TURNER, ivory cutter, of Cambridge Street, is responsible for the statement that 20,000 elephants are sacrificed annually to supply the Sheffield trades with ivory. The figures are arrived at by calculating the amount of ivory used up, and the average weight per tusk. This seems to pre-suppose that for every pair of tusks obtained an elephant has to be shot. This, however, is far from being the case. Hundreds of tusks are annually dug out of the sand in Egypt and elsewhere that must have belonged to animals which have long since paid the debt of nature. Making allowance for this, however, there is too much reason to fear that the pessimistic notion as to the exhaustion of the source of ivory supply in the comparatively near future has too much foundation in the probability of things. In the meantime it is satisfactory to know that in the process of ivory cutting nothing is wasted. The sweepings of the workshops are of considerable value as a fertiliser, while the clean dust is an article of nourishing diet. Pieces too small for anything else are used by silversmiths as non-conductors of heat in tea-pot handles. Among other interesting objects in Mr. Turner's warehouse, I was credibly informed that a tusk weighing 132 lbs. had been sold at the October sales. The price of ivory at these sales is not always an index of its scarcity or otherwise—the market being largely controlled by a comparatively small number of brokers. It not infrequently happens that vessels known to contain large quantities of ivory are intentionally delayed at sea in order to miss some quarterly sale and so maintain the price.

WHILE politicians are merely ventilating the idea of old age pensions, the principle is in course of being carried into practical effect in one of our largest silver and electro-plate establishments. The firm of Walker and Hall employ about 800 "hands," and it is among these that an attempt is about to be made to solve the problem as to how provision is to be made for the closing years of a workman's life. Mr. J. E. Bingham, J.P., the head of the firm, explained his scheme to a meeting of his workpeople held at the usual tea-time. As propounded, the scheme possesses the novel feature of not requiring any contributions from the class which is to be benefitted by it. The firm itself finds the whole of the money. It was felt that to accept contributions from the workpeople themselves would be to confer upon every workman leaving the service of the firm a right to demand his share of the subscriptions paid in, and would thus, in many cases, constitute a positive inducement to leave the service of the firm. As this latter was precisely the effect the scheme was not intended to have, the principals of the firm decided to find the whole of the money required. To become entitled to the benefits of the scheme a workman must have been in the service of the firm twenty-one years, when he becomes entitled to a pension of 8s. 6d. per week. Then follows a graduated scale of benefit up to forty years' service, which entitles a man to 17s. 6d. per week for the remainder of his life. The fund will be distributed by a committee partly nominated by the firm and partly elected by the workpeople. That the working silversmith is no rolling stone may be gathered from the fact that some fifty-three men will under the scheme step into benefit at once. If each firm can solve the problem of age pensions in this way the State will have little left to do in the matter.

WE have had occasion in this column more than once to allude to the important part which young artisans in the silver trade play in the daily life of the School of Art. The silver trade of the town in general may be looked upon as the backbone of that institution. An association of workmen of one particular firm, that of Mappin and Webb in Norfolk Street, has, however, been for some time in existence for the purpose of the more advanced study of art as applied to their own trades. For this purpose the leading workmen in the various departments—engraving, chasing, etching, ivory carving, and modelling—have been for some time attending classes. It speaks well for the success of the scheme that so many men—teachers and students alike—are willing to devote so much of their leisure to the prosecution of this scheme of self-improvement. In connection with the classes a series of lectures are being given by Mr. Howlden, one of the managers of the firm, on "The History and Development of Art from the Earliest Times." The second lecture of the series has just been given by Mr. Howlden on "The Assyrian and Persian Period in Art," and it has been quite as intelligently appreciated as his previous one upon Egypt. At the close of the lecture a programme for the "Study of Persian and Assyrian Art" was arranged for the ensuing six months.

THERE is a strong probability of an old established firm in the silver trade ceasing to exist as an independent concern before many weeks are over. Men of middle age still speak of the time when the firm of Henry Wilkinson and Co. ranked as one of the most respectable and prosperous in the town. Like many others, however, the firm does not seem to have benefitted by its transformation into a limited company. At any rate its declension may be dated from that event. The process of decay has been so gradual as to be scarcely perceptible, but just as the unwelcome truth dawns upon an individual that he is growing old, so the fact has been reluctantly realised by this company that its day is past. Some twelve months ago the state of affairs was discussed at a general meeting of the shareholders, and the decision was then arrived at to give the concern another year's trial. That year has now expired, and the results of its working being no better, the resolution to wind up the company has been taken. Failing the disposal of the works as a going concern, the whole will be sold in detail, and the name disappear from the directory.

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* We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility.

Transatlantic Jottings.

(From Our New York Correspondent.)

I DON'T believe in grumbling, nor do I in being a liberal discounter of veracity, and so I suppose I must confess that, according to accounts received from away all round, no one at the present time is suffering from the pressure of business, except in the wrong direction. That the year opened disappointingly bad is affirmed throughout this vast continent, and many events have happened which do not prophesy a very lively state in many quarters for at least some months yet. All this is accompanied by a large number of failures of no small dimensions, some reaching a good sized fifth figure.

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THE class doing the greatest number of lines in the largest amounts appear to be sneak-thieves. There have been several clean get-aways with diamond-plunder which have run into five figures, and but for the admirable policy of the Jewelers' Security Alliance, the bounce would never have been run down. In England you don't perhaps realize the value of such an association, as I don't remember seeing the report of a half a dozen cases in the Watchmaker and Jeweler, although I have been a constant reader for the last ten years; but here in America robberies were formerly perpetrated upon travelling salesmen so frequently, that about ten or twelve years ago the Alliance was formed, with the only motto for such a society, "Spare no time or expense to get the conviction of every thief," with the result that robberies of this sort have been reduced to a minimum. Recently the Alliance has run to ground some notorious thieves, and secured the greater part of the plunder.

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JEWELERS, Silversmiths—in fact, every trade are on the road to exhibition-mad. We naturally expected it would be the greatest show that ever *was* on earth, but it appears about safe now to say that it will be the greatest show that *ever will be.* Specimens of silver work many feet long are in preparation for that immortal occasion, and every day news arrives of prodigious exertions from almost every country in the civilized world. I should say that it will bring such a concourse of people together as the world has never seen, and that they will take back with them to the furthermost isles of the ocean the impressions of the various big nations from what they see of them at this marvellous exposition.

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SO far as I can hear, the British Watchmaking and Jewelry trades are not taking such steps to be represented as other trades. I don't know if the watch trade are afraid of being beaten; I don't think they need be. But of this we may be sure: that if they do not exhibit, judgment will go by default. I think, *Mr. Editor*, that you might bring this question more prominently before the trade as there is a great ulterior good to come out of an exposition of this size and internationality.

Round the Watch Factories.

The report of a threatened strike at the Elgin, to which I referred last month, turned out to be entirely groundless. Everybody seemed to know some *secret* connected with it, and we must commend them for keeping it as such. But the assumption of knowledge not to be divulged is often misleading, and I guess I'll know the rights of a thing before I publish it again.

The whole thing arose from a cause which frequently happens. When a new movement is first turned out men are paid a little extra for it till they have time to become expert in it, when it is reduced to adjust the schedule. In January some eighteen of the men signed a petition asking for the reduction not to take place, but were told the company could not favorably receive it. These men are now amongst the others in the factory earning their three or four dollars a day. In fact, the only trouble that has occurred at this horological paradise was that caused by two *employés* selling the company's productions to the public, and so becoming competitors of retail dealers, which is against the terms of the agreement.

New additions are being made, or are in contemplation, at the Lancaster Watch Factory, (but rumors of quite another nature are also afloat), and at the New Haven Clock Company's factory.

The Du Laney Clock Company has been capitalised to the tune of 300,000 dols. at Valaparaiso, forty-five miles from Chicago, having taken the immense building formerly held by the Barry Wagon Company. The clock is an electric one, and they claim it to be the best on earth.

The curious litigation in connection with the Paillard Non-Magnetic Watch Company has come to an end, and the business will henceforth be carried on under the title of the Non-Magnetic Watch Company at 177, Broadway, New York. It is their intention to advertise the business well, as all members of the board are firm believers in the future of their production. If heads count for anything—and assuredly they do—Charles O. Morris, the president, is a man of the highest standing and quality. He was twice President of the Gold Exchange, and President of the Consolidated Exchange. The paid-up capital is 100,000 dols. Catalogues are now in the hands of the trade.

The Waterbury Clock Company have removed to 134 and 136, Wabash Avenue, Chicago.

The United States Watch Company have been running eight hours a day.

The Elgin National Watch Company pay a tax at Elgin of over 13,000 dols.

The Waltham have won the suit against the Illinois Watch Company for infringement of patent in their stem-winding watch. The defence argued want of novelty in the invention, and also pointed out differences between their product and that of the Waltham, but the Court ruled infringement.

The Montana Ruby Mines.

THE statutory meeting of the company was held on the 22nd ult. It mainly consisted of the chairman (Lord Chelmsford) drawing attention to the report of the directors, as it could not well do more. A question, however, was asked whether it was a fact that several shareholders had applied for the return of their money on the ground of misrepresentations having been made in the prospectus. To this the chairman replied that only one such communication had been received. Mr. Streeter made some still more wonderful statements: Firstly, that *he* could take all the stones produced from the mines at such a price as would pay the company a large dividend; and secondly, that he certainly did not expect to find *gold* when he went to inspect the gem mines. Our memory is certainly at fault in connection with this matter. We must look up the subject again, which is what we should recommend all those interested in this concern to do. Memory will fail sometimes, but it must not in cases like these.

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Although the Diamond-Kings speak so sanguinely, and although they are declaring such big dividends and giving away bonuses, the stock market does not bite so eagerly after them as could have been expected. And any day we must not be surprised to hear that other mines, which are now known to exist, turn out to be formidable rivals, and important factors in the balance. There is one significant fact that may mean something, and that is that a very high official of Rothschild's is on his way to South Africa; what for, nobody knows, but all sorts of conjectures are rife.

Our Letter from the Diamond Fields.

(By Vaalite.)

Kimberley, Jan. 26th.

IN my last letter I informed your readers that the De Beers Company had closed in with Mr. Ward, so that they would ultimately become the possessors of the Premier mine. I am now in a position to give you the details of that intricate Rhodian bargain, but it would have made my letter too long last month; moreover, I needed confirmation (which I have since obtained) of what I had heard. And even now to understand the extreme complications of the case it is necessary to call to mind several of the incidents of which I have written you before. First of all you may remember that there were two claimants, Messrs. Coronel and Lawrence, who disputed half Ward's claim, but who sold their claim to the Cape of Good Hope Bank (now in liquidation); this claim was obtained by the De Beers, at what cost nobody knows, but probably not much. Now comes the buying of the estate upon which the mine is situated from Wessels. In all, the estate consists of fifteen farms with a total area of 52,000 acres or about eighty-one square miles. In this buying up the whole of the estate they have secured several other more-than-suspected mines. The present property of the De Beers—the Bultfontein estate—joins on the N.W. of the Alexandersfontein, a continuation of the line dividing them runs along the N. boundary of the Benauwdheidsfontein estate; while the extension of the line dividing Du Toits Pan from Bultfontein mine forms the boundary between Alexandersfontein and Benauwdheidsfontein, the angle in the latter, on which is situated the Premier mine, just crossing to the west of the Orange Free State boundary, so that it is very close to the Du Toits and Bultfontein mines. The whole of this valuable property has been acquired by paying Mr. J. J. Wessels £303,000. And now for Mr. Ward, to understand whose share will require a concentration of thought that can follow one of Mr. Rhodes' bargains: this discoverer, this worker, this developer, is to have as his share the right to use ten steam gears capable of hauling and washing 5,000 loads a day until he has cleared 5,000,000 loads of the top yellow away, which is only a portion of that now in sight, but he must clear out in five years. He must not put more than 20,000 carats a month upon the market, so as not to affect the De Beers monopoly, and for this privilege he is to pay to the De Beers Company no less a sum than £150,000, or one-half the price paid by the company for eighty-one square miles of rich mineral territory. And further, Ward is to pay interest upon the sum at the modest rate of 9 per cent., so that he will have to pay them, say £210,000 in addition to the amount he has first to pay Armstrong, detailed last month. It will be remembered that in the history of the other mines the yellow was always comparatively poor, and indeed in some cases a good depth into the blue had to be penetrated before the maximum yield was reached. So that Mr. Ward has just got the pleasure of working off the top stuff and preparing this gigantic mine for the De Beers, and all through the scheming, foresighted, checkmating policy of the director of the company. It may be said that Mr. Ward has, even as it is, a wonderful chance of making a fortune. With even his limited number of steam gears he could raise his 5,000,000 loads in three and a half years, and if he only *netted* 2s. 6d. a load out of it he would in that short time make £600,000, and be a rich man. But there is no reason why he should not have been able to be worth £6,000,000, and Wessels too, if it had not been for the interposition of others. But although Ward is certainly a far more business-like man than was Armstrong, even now he talks about not being in a hurry. As, however, he is going to retain Major Wollaston as manager, those who know the gentleman will rest assured that he will not allow the grass to grow under his feet, but that he will go at it in earnest, and bring to bear upon it the skill he has acquired in twenty years' practical diamond mining. We shall then be able to compare notes of the difference of the manner in which the other mines were developed when in numerous private hands, all working for themselves, totally disregardless of the next claim; and a mine developed under a scientific method and with modern machinery. All out here hope that Mr. Ward will get all he so richly deserves after the battles he has fought, and after the taunt and calumny he suffered. Unparalleled as was the history of some of the other mines, we yet question whether any of the mines can furnish a more romantic history than the two first years of the Premier.

It will thus be evident that this great find, which might have had such an immeasurable influence upon the diamond market, will not have the slightest impression upon it, as before the union the total of four mines reached over three and a half million carats per year. Whether the company will wait until Ward has cleared out before they begin their workings there is nothing to say. Of course, there is no occasion for them to do so, as they could easily sink a shaft outside the mine and drive in without interfering in any way with him. It is believed that Mr. Ward will employ about a thousand men in the mine, so that we hope to have a turn in the prosperity of the diamond fields, as I am sure we need it, the last year or so being the blackest in the history of this important colony. I am certain that before the De Beers have got possession of this mine others will be shown to be *real* ones. Indeed, if this mine had done nothing else, it will have stirred up more men and set more prospecting to work with greater results than any other circumstance. Some of these results—the details of which I must leave till my next letter—are already known to a few.

I may just mention that a fine stone of 136 carats has been found at Koffyfontein, and another of 103 carats at Du Toits. In connection with the former, an action is being instigated which will disclose some of the worst phases of I.D.B'ing ever made public. It will not be a case of the knights of Petticoat Lane as the receivers and buyers, but of one mine illicitly buying stones which belong to another. Perhaps the turning up of this stone will be the turn of the tide, and the adoption at Koffyfontein and other mines of a more rigorous system, similar to that in force at De Beers. It is certain that this I.D.B'ing has been the ruin of what might otherwise have been prosperous and going concerns. As actions are now pending, and a manager, whose name has been mentioned in these columns, has been held on bail for £1,000, I cannot give the details of what I hear. In the original transaction the diamond is said to have been bought for £67 10s.; it was subsequently sold out here for £1,700, and was forthwith sent over to England.

I have recently been busily engaged gathering all the statistics and particulars of all the mines here up to date, their method of working, the nature of their claims, and their probable capacity of affecting the diamond market in the future, for although we often speak of the great monopoly, it must not be forgotten they are not the only producers of diamonds. The figures of the returns for 1891 not being made public at present, I am unable to quote them. In 1890 the total value of diamonds sold by the De Beers was under three million sterling, but I have no hesitation in saying that the diamonds in 1891 produced by other companies amounted to four and a quarter millions.

Windows and Window Dressing.

By the Editor.

(*Continued from page* 155.)

BEFORE passing on to describe any other window fittings, it may be advisable to notice one or two of the various styles and descriptions of displays to which the fittings last described will lend themselves. In the other instance we confined ourselves to gem goods only. We will now consider them dressed with all gold. The bottom front can still be retained, or a series of trays can be made to fit along in the place of it. These may be either rectangular, and fit upon a flat bar, say, three inches wide, passing along at the back, in which case they would all fit up close to each other; or, if the position is a prominent one, trays may be let into it, dropping over a metal bar, as shown in Fig. 3. Fig. 4 shows the arrangement of the back fitting: A is the bar, upon which the trays hang; B a similar bar, which acts as a stop; C is one of two brass clips, by which the tray is held in position; and D a hook, by which it is lifted out and in from behind. As this is a good broad expanse, it offers a wide field for diversity of outline in trays; pointed oval Gothic matches the end members above, but it entirely depends upon the nature of the stock—whether it happens to be very large in any particular line. Probably for some time past more rings have sold than anything else; it is therefore desirable to keep them well to the front. We have therefore occupied this space with them. In Fig. 3 we show two shapes of trays, and it will be seen that the interspaces in each case are suitable for different articles. Flexible bracelets show well festooned along the bottom with many pattern trays. When the divisional line is narrow, as between the first and second, a curb can be let fall; if, however, watch-bracelets are a speciality, then trays such as the third one offer a better position. If, again, the former are preferred, the upper triangles form good positions for them; as they also do for half-suites. If gents' pins are made at all a speciality these upper triangles form splendid places for them, and small stands, with a white covered cushion, can easily be fixed in these positions with a rectangular peg passing through the front board. The position also forms a charming place for conventionalised shells, in which any novelty or unmounted gems find a highly perspicuous place. A scroll in the style of one of the Louis, in gilt with a velvet top, is also most effective. The centre tray or trays could be employed for wedding-rings, and should be of such a shape as to be apparently supported in position by cupids placed in this angle. If the stock would not furnish sufficient rings for these seven or eight trays they could be reduced to five, and between them could be pilasters of either studs, or brooches, or earrings. If it is not desirable to exhibit so much stock, a shaped velvet-covered pilaster can be interposed between each tray (dividing up the board into panels), the capitals of which form excellent positions for hour-glass pin-stands.

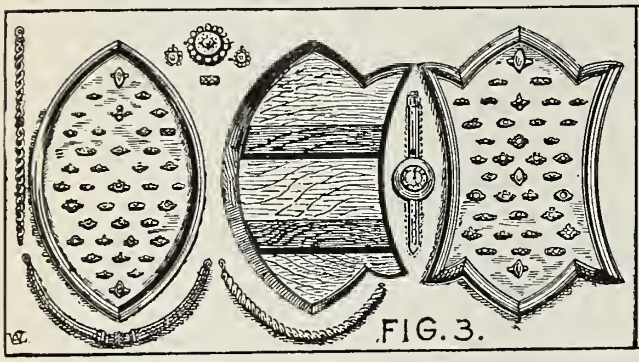


FIG. 3.

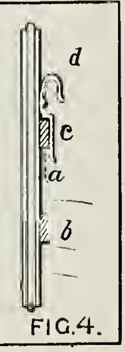


FIG. 4.

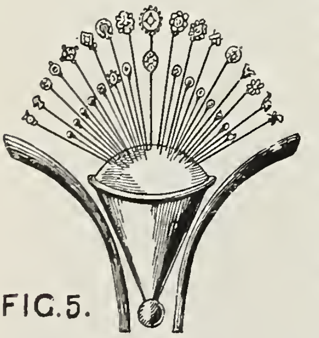


FIG. 5.

Of course any other suitable stock could be employed in this front position—half-suites, earrings, lockets, seals, charms, and numerous other things.

Coming now to the next member, the bottom, this can be well divided into three trays, which can easily be lifted out and in the window, and much closer attention can then be given to the fingers of the light-handed fraternity than if innumerable dives have to be made into the window. The two side trays can be made with cork bottoms, and employed for fichu brooches. If these are largely stocked, —and there are vast quantities of them sold—they can be inclined to the view of the customer outside, and placed pretty thickly, without suggesting the idea of cramming.

The centre tray, a little more elevated perhaps than the others, can be well employed for the display of latest novelties, a row of watch-bracelets from the front backwards, forming the centre, the edges being bounded by a couple of chatelaine watches. A row of new enamels running diagonally makes an effective main feature in some novel case, novel shape, novel material, novel anything, followed by a row of moonstone competitors. The front triangle thus left can be employed for any late arrivals in links, brooches, or some of the charming things that are now produced in platinum and various hued gold. The larger back triangles can be employed for, say, pearl work, such as sprays and the like.

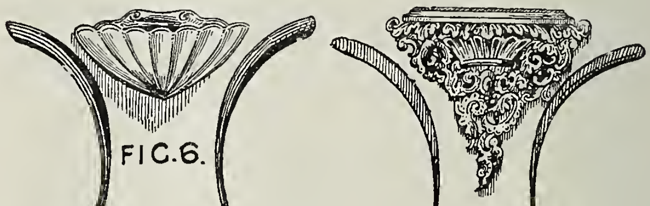


FIG. 6.

In dressing a window everything turns upon symmetry: if a half-dozen watch bracelets be used in the centre, the bands, if flexible, should be either all pulled quite light, and laid as straight and as level as it is possible, or they may be curved, but they must be *something*. They must bear evidence of design, which, without being formal, will suggest the idea of "very nice" to the most refined tastes. Their spacing must also claim great attention, and must be carried out with care. It is not altogether geometrical accuracy that must be studied, but *effect*—they must *appear* to be equal. The amount of space left by the patterns will determine this better than an inch measure. All this comes of practice and care, and watching these little points, although they seem very simple. An assistant's handiwork in a window is as recognisable as his handwriting; one brooch "out of square" or out of pattern in a window has an unpleasing effect long before we recognise what is exactly at fault.

An altogether different system could be adopted with this bottom by employing cased goods; of course, so displayed they occupy far more than twice the space than under any other arrangement. The worst feature about cased goods is the lids of the cases, but this evil is entirely remedied by the use of cases where the tops snap on and off. We will therefore imagine the bottom so dressed with cased-up jewelry with the lids off. We will imagine we have three large pieces, say necklets, in rather elongated kidney-form cases. The one most dissimilar—which let us hope is the best—we place in front of the centre block, and the other two in the side recesses. We next take, say, a dozen or so sets of studs with their blocks covered white, and with these fill the two spaces between the three necklets in a nice sweeping curve, with all the blocks radiating evenly, all being directed towards a line somewhere at the back centre block. If there are sufficient studs in stock, carry similar curves round the end stands up to the necklets; if studs are not to hand use brooches. In front of the centre necklet place three rows of three sets of pearl studs or novelties in links, with their blocks also white-covered; along the front run a row of eartops, filling up the back with level rows of brooches, pendants, and sprays, getting larger as they go backward. Each of the back segments being moveable, the outline of the window can be accommodated to the stock in hand. In our next we will devote our attention to them.

(*To be continued.*)

Watch and Clock Making.

(*Continued from page* 139.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making.

(III.)—Honors Paper, 1880.

IN a general way we are accustomed to use the term weight in two different senses, according as we wish to denote certain conditions to which it is applicable. Thus, when we say a body is very heavy or of great weight, we mean it exerts a great pressure. Here then, we refer to weight as a pressure exerting force. Then we say a "body weighs such a number of pounds," in which case we use the term weight in a numerical sense to denote the quantity of matter collected in any body. Now a little reflection on the means used in this last case may help us considerably. In England the unit of matter is one pound, but in a commercial sense it does not in the least concern us as to the value of a unit itself, because it is simply used as a means of comparison; we only require to know what a unit denotes, and then we are able to form conclusions by simple numbers as to the quantity of material in anything in question. Now when the means used for determining the quantity of matter in a body is the balance with the ordinary turning scales, that is, where the weight is placed in one scale and the body to be weighed in another, it would not in the least affect the poise if the unit of comparison is increased or diminished conditionally, that the same rate of variation is maintained as to the body in the other scale; in other words, the variation in the value of the unit would not affect the number which expresses how many units of weight a body weighs if the weight of each initial unit of matter varies in the same ratio. This is just what happens under variation of gravity as regards comparison by means of such a balance. With the variation due to gravitation the pressure exerted by a unit of matter varies in the same proportion as the pound, and therefore the balance is not disturbed. When, however, pressure is used, by the effect it produces as a mode of estimating the quantity of matter, we are no longer independent of gravity. This may be seen in the spring balance. Here a point is displaced and the pressure required to effect the displacement is known, hence the pressure can be ascertained in terms of the displacement. If now this pressure is applied by a suspended body, it may vary in two ways, viz., increase in the matter contained by the body or variation of gravitation. Thus it is that in all transactions where pressure is used as a means of comparison or effect, when that pressure is due to gravitation we require to estimate the variation of gravity to obtain the measure of pressure. Since then the pressure exerted by a quantity of matter is liable to variation, we are under the necessity of taking account of the way that the pull which a body can exert may vary. Now the quantity of matter in a body in a mechanical sense we call mass, the pull or pressure it exerts vertically downwards is termed weight, and the force which effects the measure of this pull or pressure is the effect of the earth and is termed gravitation. Thus I think it will appear clear, that the quantity of matter may remain the same, but the pressure it exerts, or its weight, will vary in exact proportion as the effect of gravity, and thus it is that if we divide the variation of weight (which means here purely pressure) by the variation of gravity, the quotient must always be a constant number; and therefore, in order to get an estimate of the quantity of matter in a body, when mere pressure is used as a unit of comparison, we require to resort to this method, hence the expression (*c*) page 255.

To show the technical importance of the bearing of this principle I may use the following illustration:—The least addition of mass to a chronometer, or watch balance wherever it may be placed will effect the time sensibly; but if added to the pendulum it will cause gain or loss, or the effect will be zero, as the mass is placed above, below or at the centre of oscillation, and yet if a watch or chronometer is moved from one latitude to another the time is not effected, while the time of an oscillation of the pendulum varies in an inverse manner to the latitude. The explanation is, that in the first case the time depends on the constancy of the moment of inertia [see (c) 3 II.], in which mass is one factor and radius of gyration squared another, neither of which is affected by change of latitude. In the second the accelerative effect of gravity constitutes a factor, hence the variation of time with a change of latitude.

But now we have to consider what value we have to assign to M in the expression.

$$M = \frac{W}{g} \; . \; . \; . \; . \; (c) \text{ (page 255, vol. xvi.)}$$

If W means one pound, and since g denotes 32·19 in the latitude of Greenwich, it is evident that M would come out as $=\frac{1}{32\cdot19}$. Such a sense would lead us into an absurdity, for that would mean about half an ounce, which cannot be, hence we must either attach a different meaning to M or W, and this is, of course, already done—that is, the expression (*b*) (page 255, vol. xvi.) is used in a dynamical sense, that is, W is used as expressing a force, and is estimated by means of the rate of motion it generates, when acting on a certain mass, or the measure of the momentum generated in a second of time (as explained in reference to (*c*) (page 255), the unit of weight in this case being the absolute unit of force.

As has already been stated, gravitation is determined by the accelerative effect it produces (*m*) (page 255), which is expressed by the velocity a body acquires falling freely in one second in any given latitude, hence at the end of one second the momentum of a falling body is Mg. Where M means the mass in pounds, the British pound being meant as the unit. Now the force that generates this momentum is the effect of the weight or pressure, which again is due to the effect of gravitation, but the momentum of a body is equal to the force that produced it, hence W in this case denotes the force that has generated the momentum, and therefore $Mg = W$. and W then means Mg units of force. Using a numerical illustration agreeable to the definitions of the unit of force on page 255, taking $M = 1$ pound and g corresponding to the latitude of Greenwich, $Mg = 1 \times 32\cdot19 = 32\cdot19$ units of momentum, and this is the force that has generated the momentum in a second of time, and is denoted by W, therefore $W = 32\cdot19$.

(*To be continued.*)

Determinative Gemmology.

THE PLEOCHROISM OF GEMS.

By the Editor.

(*Continued from page* 150.)

The Action of Crystals upon Light.

We are now led to inquire whether there is anything in either the composition or molecular structure of gems which modify their action upon light; and we shall soon find that if our conception and definition of light be correct, it is principally the latter.

We have previously represented light to be the result of equal transverse vibrations, and when such a motion meets with a full-faced all-side resistance it will simply be retarded; but otherwise it will proceed in the same direction, although with less velocity. If, then, a ray of light meets a piece of glass under such conditions, it simply passes through it, and if the glass be free from stain, etc., we can *see through it*, and the objects appear in their natural form and hues. This is because the light meets with a resistance which is the same on all sides. Now it is well known that heat, like light, is a mode of motion, and the following experiment may make this still more clear. If we cut a slice from a ruby-crystal at right angles to the direction of the prism, we shall, if the crystalline form be perfect, have a hexagonal plate. But whatever were the last chapters in the life-history of the crystal, and however irregular its surface, its symmetry about its imaginary axes—of which we have previously spoken—is the same. If, now, we pierce the centre, and cover the plate with wax, and insert into the hole a hot wire, we shall find it will melt the wax in a *circle* from the centre, equally on all sides, as shown in figure 3, where we see the melting, greatest in the centre, dying away evenly all around.

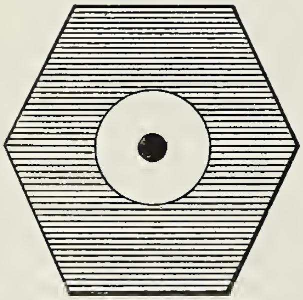


FIG. 3.

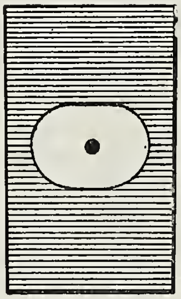


FIG. 4.

If we were to enclose a long cylinder of ruby in a sheet of sensitized paper, and cause a platinum wire, passed through its principal axis, to glow, we should find the sheet of paper record a uniform illumination, showing that the ray met with an equal elasticity on all sides of it, in all planes at right angles to the principal axis of the crystal. If, however, we cut a plate from the same crystal *along* its principal axis, as shown in figure 4, and similarly puncture it, cover it with wax, and pass a heated wire through it, we should find a very different result. Here, instead of the melted area being a circle, it is an ellipse, showing a different degree of elasticity in the two directions; one elasticity along the principal axis, and another at right angles to it.

We must now revert to the subject of the axes of crystals. It will be remembered that the various systems of crystallography derived their names from the lengths and positions of these imaginary lines, and that in the isometric system there were three axes at right angles, all of equal lengths. There is therefore in this system the greatest possibly symmetry, so that a ray of light passing through such a crystal in any direction would find an all-sided retardation; or if we like to realise the wave surface as a sphere, we may say it would retain its shape in a passage through the crystal. However, it is best at present to speak of the various *elasticities* along the axes, and their effect upon the all-sidedness of the waves of light in their passage through the gems.

Isotropic Gems.

All gems occurring in the amorphous form, or crystallizing in the isometric system, which offer the same structural conditions through any plane or along any of their axes, are said to be *isotropic*. To the former belong opal, hydrophane, melted quartz (often mistaken for diamonds), some agates obsidian (all artificial gems and glass not subjected to pressure). To the latter belong diamonds of all hues, spinels, and garnets. The whole of these allow a ray of light to pass through them at right angles to their surfaces without in any way interfering with it, save by uniform retardation and absorption; but the latter phenomena can be left unconsidered for the present.

Anisotropic Gems.

When a gem presents two or three elasticities to a ray of light passing through it in various directions it is said to be *anisotropic*. In the case of the ruby just illustrated we saw that it possessed two; now it will be remembered that in the hexagonal system, in which this gem crystallises, there are three lateral axes, *all of which are equal*, and a fourth lying at right angles to the former. Assuming the axes of elasticity to coincide with the axis of figure (which is the case with the majority of the gems), it becomes evident that a ray of light travelling along the principal axis faces the conditions of symmetry presented by an isotropic body. This direction is called *the optic axis*, and gems in which this condition obtains are said to be *uniaxial*.

But the hexagonal system is not the only system that presents this symmetry. In the dimetric there are two lateral axes of *equal lengths*, and a third at right angles; consequently, a ray passing along the principal axis experiences the same kind of all-sided symmetry as in the case of the hexagonal system, and the principal axis becomes an *optic axis*, or the line along which a ray behaves as though it were passing through an isotropic medium. There is one feature about the optic axis in which it might appear to differ from the axis of figure, and that is that the elasticity along it is sometimes greater and sometimes less than that of the lateral axes.

Positive and Negative Crystals.

When the elasticity along the optic axis is less than at right angles to it, or, in other words, when the vibrations are more retarded in that direction than along the other axes, the gem is said to be *optically positive*. When the reverse is the case, and the optic axis is the direction of greatest elasticity and least retardation, the gem is said to be *optically negative*. Both these conditions obtain in both the dimetric and hexagonal systems. In the former we get idocrase and all its varieties as negative (—), and Zircon in all its varieties, such as hyacinth, jacinth, and jargoon, as (+) positive. In the hexagonal we have the corundums which include ruby, sapphire, oriental-emerald, and any other hue; beryl, which include all its varieties, such as aquamarine and emerald; tourmaline with all its varieties, such as rubellite, indicolite, achroite, etc., as —; and phenacite, diopside, and quartz with all its varieties as +.

There is one more phenomena, viz., absorption, to which we must refer before we revert to the use of the dichroscope, but this we must reserve till our next number.

(*To be continued.*)

Unwrought Materials.

ALUMINUM LORE.

As each number of the journal comes round, there are always various contributions to the wonders of this certainly important—but at present imperfectly understood, and frequently ridiculously over-rated—metal. Now some new method is claimed that will produce it at 30 cents per lb., now some unheard-of method of reduction which will reduce it still lower; but many of these exist on paper only. News now reaches us under the head of "Mounds of Aluminum" that a "fat" comedian is in possession of 150 acres near the mouth of Chesapeake Bay covered with an enormous depth of clay, which yields forty to sixty-five per cent. of aluminum, and that a new process has been discovered by a German chemist of Philadelphia by which he can reduce this at sixteen cents per lb. But when we remember that the proportions of the metal (aluminum) present in the purest form of alumina is only 53·4, and even assuming that the so-called clay should be a pure *bauxite*, as even this does not yield much over 60 per cent. *of alumina*, it is obvious that the report must be taken *cum grano salis* with the grain of the largest dimensions. If, however, by aluminum is meant alumina, then there is nothing remarkable in the deposit, as thousands of such clays exist in this country and on the Continent.

A BIG SILVER COMPANY.

There is a rumor current just now that a big company will shortly be formed in London to acquire the whole of the South African Silver Mines, many of which are known to be of important dimensions.

ASBESTOS PORCELAINE.

M. Garros recently read a paper before the Academie des Sciences, Paris, upon a method of manufacturing a new kind of translucent porcelaine from asbestos. The asbestos is ground to powder, treated with sulphuric or hydrochloric acid to free it from iron oxide; it is then made into a paste, moulded, dried slowly, and ultimately baked for eighteen hours at a temperature of 1200°C. It possesses qualities never before obtained.

AMERICAN TURQUOISE.

The Azure Turquoise Company, formed some months ago at 90, Nassau Street, have their product now before the trade. The quantity is not so great as was at first thought, being quite limited. The company cut and polish it themselves, and have one or two fairly large specimens on view.

AMERICA'S QUOTA OF THE PRECIOUS METALS.

Last year Cousin Jonathan added to the world's supply of gold 1,620,000 ounces, being 30,000 ounces more than the year before. But from the figures of the Randt output that we usually publish monthly it will be seen that South Africa is close upon its heels, and should it increase its output for a few months with anything of the rate it is now doing it will soon leave America behind. During the year the United States added to the world's stock of silver 58,000,000 ounces, being an increase of three and a half million ounces. With these we have only to compare the productions of the Broken Hill, and from this district let us hope the water-famine has passed.

STARTLING ANNOUNCEMENTS.

There has been no small amount of excitement in certain metallurgical circles lately over an announcement from Germany. This is to the effect that a new electrolytic process has been invented, for which the inventor is to receive no less a sum than 50,000,000 marks. The process, it is said, will entirely do away with the blast furnace, and reduce the rate of reduction of iron, gold, silver, copper, and aluminium ores by 80 per cent. But we shall want to know more about it before we regard it as a fact.

The Dublin Assay Office.

The Wardens of the Goldsmiths' Company remind the trade that notwithstanding the duty on gold and silver is abolished, hall-marking is still compulsory, under a penalty of £10.

Prices to be made for assaying and marking gold and silver wares on and after the 1st January, 1892:—

GOLD.	s.	d.
For each Wedding-ring under 6 dwts.	0	1
For each Fancy Ring	0	2
For each Medal or Badge	0	4
For each pair of Sleeve-links	0	4
For each Bracelet	0	6
For each Chain	1	0
For each Watch-case	0	8
Plate per oz....	0	6

One shilling is charged in all cases for assaying above the marking.

SILVER.	s.	d.
Plate per oz.	0	1
Wares (not plate) weighing under 3 dwts. each ...	0	0½
Under 30 articles extra for assaying	0	4
Wares under 6 dwts. each	0	1
Under 12 articles extra for assaying	0	4
Medals or Badges over 6 dwts.	0	2
Watch-cases, each	0	6
Lowest charge for silver	0	6

The above office is open on Tuesday, Thursday, and Saturday, from 10 o'clock. Work must be sent before 11 o'clock; letters and work from the country, to ensure prompt attention, should be addressed to S. W. Le Bass, Assay Master, 5, Fleet Street, Dublin.

Coventry Watchmakers' Provident Society.

In three years this laudable institution will reach its jubilee, and although it has not all been plain sailing, the society can be congratulated on the report presented by the secretary on the 8th ult., at the annual meeting, over which Mr. Suddens presided. There was a good gathering, and the reports were well received. The number of members now stands at 268, the amount of stock per member being £18 2s. 3½d. The balance sheet showing £4,854 16s. 9d., and by rigorous calculation, with liabilities calculated at a maximum, they were solvent, a condition far removed from that of 15 or 16 years ago. Some very interesting figures were given during the evening from a statistical point of view, which showed that both death and sickness rates were less amongst the members of our trade than with the average of others, and that they were peculiarly exempt from chronic diseases. Thus the actuary had assessed their liabilities for sick pay for five years at £2,006, while as a matter of fact it cost the Society only a trifle over a quarter of that sum. There were other advantages of the Society pointed out, such as those which arise from not taking men over thirty years of age. The new committee consists of Messrs. J. Suddens, C. T. Hewitt, J. Beesley, W. Middleton, W. Sidwell, T. Brown, J. Bromwich, J. Price, and R. Denny.

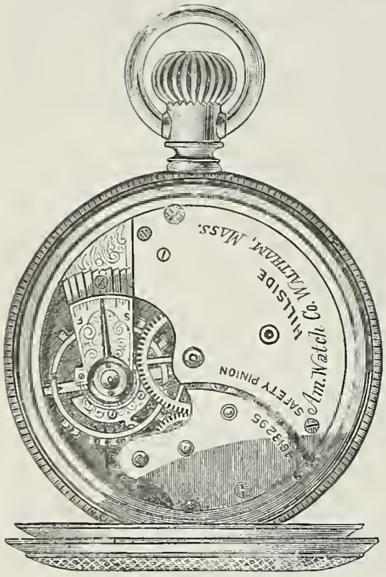
Telegraph Address—SYDENHAM, BIRMINGHAM. Telephone Address—4,059.

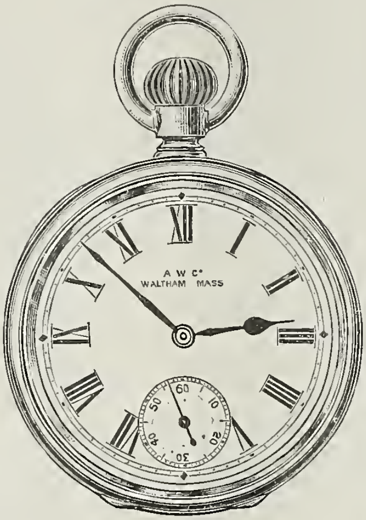
A. SYDENHAM, Wholesale & Manufacturing Jeweller, 26, Frederick St., BIRMINGHAM, ENGLAND.

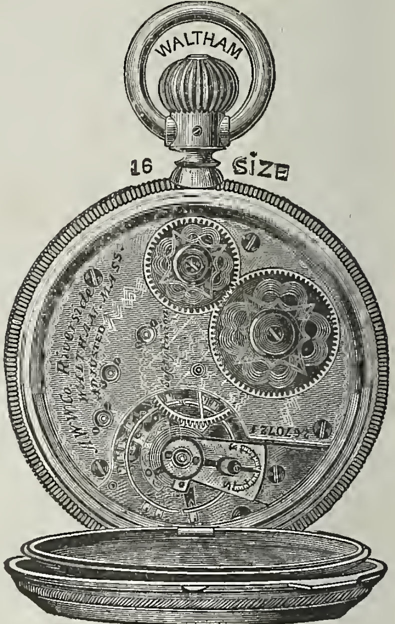
For Home and Export.

GOLD AND SILVER WALTHAM WATCHES

OF EVERY DESCRIPTION.


Hillside
Am. Watch Co. Waltham, Mass.
Safety Pinion


A W Cº
WALTHAM MASS


WALTHAM
16 SIZE

A Large Stock of these Splendid Watches to suit all Districts.

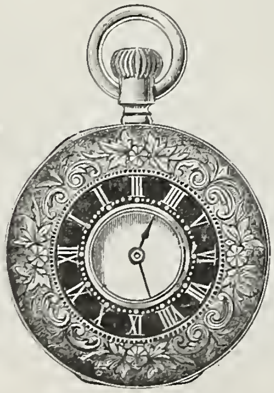
(ALL WATCHES HAVE COMPENSATION BALANCES, AND HAVE CRYSTAL GLASSES, AND, IN MOST CASES, BREQUET SPRINGS.)

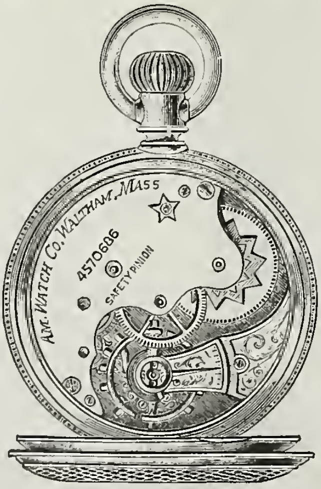
Gentlemen's Watches.	Key-winding	Keyless	Hunter
Silver Open Face Snap Cases, *from* - - -	£1 12 9	—	—
Silver Open Face Spring Cases, *from* - - -	1 13 9	—	—
Silver Hunters, *from* - - - - -	—	—	2 0 6
Gold 10 carat Open Face *from* - - - -	4 13 0	—	—
Gold 10 carat Hunters, *from* - - - -	—	—	5 17 0
Gold 10 carat Open Face, Keyless, *from* - -	—	5 8 0	—
Gold 10 carat Keyless Hunters, *from* - -	—	—	6 10 0
Gold 18 carat Open Face, *from* - - -	8 2 0	—	—
Gold 18 carat Hunters, *from* - - - -	—	—	10 8 0
Gold 18 carat Keyless, Open Face, *from* - -	—	9 17 0	—
Gold 18 carat Keyless Hunters, *from* - -	—	—	12 0 0

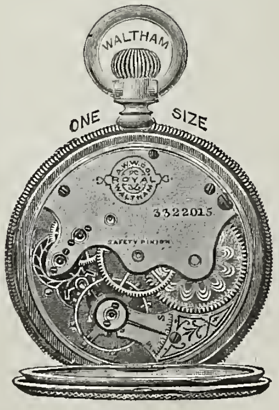
Ladies' Watches.	Key-winding	Keyless	Hunter
Silver Open Face, *from* - - - - -	£1 18 9	—	—
Silver Hunters, *from* - - - - -	—	—	2 1 6
Gold 10 carat Open Face, *from* - - -	3 8 0	—	—
Gold 10 carat Hunters, *from* - - - -	—	—	4 6 0
Gold 10 carat Open Face, Keyless, *from* - -	—	4 2 0	—
Gold 10 carat Keyless Hunters, *from* - -	—	—	5 0 0
Gold 18 carat Open Face, *from* - - -	5 19 0	—	—
Gold 18 carat Hunters, *from* - - - -	—	—	7 2 0
Gold 18 carat Keyless, Open Face, *from* - -	—	6 8 0	—
Gold 18 carat Keyless Hunters, *from* - -	—	—	7 12 0

GOLD AND SILVER WALTHAM WATCHES OF ALL THE BEST SELLING GRADES IN STOCK.

WALTHAM WATCHES FOR LADIES, Hunter, Half-Hunter, Open Face, Keyless, Plain, Engraved, Fancy and Enamelled Cases, 18-ct. and 10-ct., Gold guaranteed, and Hall-marked Silver.




Am. Watch Co. Waltham, Mass
4570606
Safety Pinion


WALTHAM
ONE SIZE
ROYAL
3322015
SAFETY PINION

A. SYDENHAM, Wholesale Jeweller, 26, Frederick Street, BIRMINGHAM, ENGLAND.

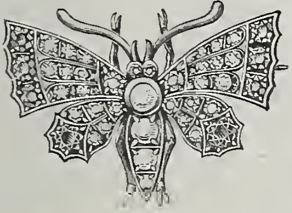
Telegraph Address—SYDENHAM, BIRMINGHAM. Telephone Address—4,059.

A. SYDENHAM,

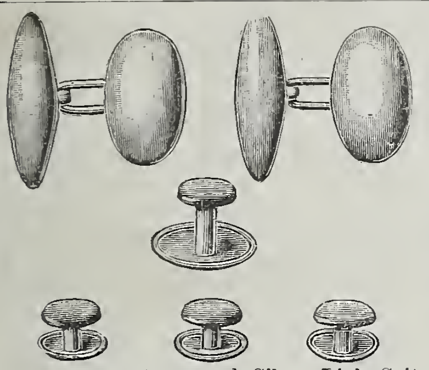
Wholesale & Manufacturing Jeweller,
26, Frederick St., **BIRMINGHAM,**
ENGLAND.

For Home and Export.

SYDENHAM'S DIAMOND and GEM SET BROOCHES.

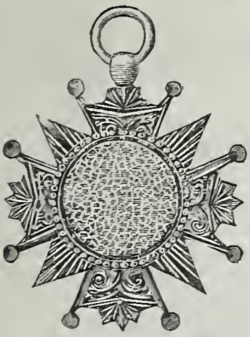


These diamond and gem set Gold Butterfly Brooches are the prettiest things ever made. Pearl bodies as sketch, 75/- each. Can be used as brooch or hair ornament.



18-ct., 15-ct., 9-ct., and Silver Link Suites, Studs and Collars of every description.

A. SYDENHAM for MEDALS



For Athletic Sports, Skating, Yachting, Boating, Curling, Golfing, Swimming, Shooting, &c.

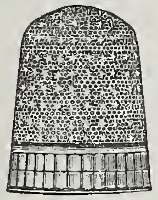
Agricultural Shows. Root, Bird, Dog, Rabbit, Horse, Bee, Pigeon, Canary, Poultry Shows, &c.

DRAWINGS and PRICES
On Application.

BRACELETS AND BANGLES

Of every description, from the cheapest to the most expensive.

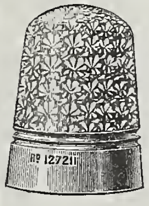
Bright Gold Bracelets, from 8/6 upwards.
Bright Gold Bangles, from 6/6 upwards.
Bracelets in Silver, narrow, Hall-marked, 3/- each.
Bangles in Silver at all prices.
Indian Bangles, -/8, 1/-, 1/3, 1/6, 1/9, 2/- each.



STAR.

This is the great house for **GOLD AND SILVER THIMBLES.**

Silver Hall-marked Thimbles, 7/6 to 18/- per dozen.



DAISY.

The New Dorcas Thimbles, same as drawing, and other pretty designs, 21/- per dozen.
Plain Pattern, 17/- per dozen.

DIAMOND GOODS of every description.

Ladies' Diamond Rings, £1 to £20.
Gentlemen's Diamond Rings, £5 to £40.
Diamond Fichu Brooches.
Diamond Spray Brooches.

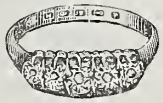
DIAMOND PINS from the cheapest to the most expensive.

Keepers—18-Carat—To those of my friends at home and in the Colonies who have not yet seen my splendid selection of 18-ct. Keepers, I ask them to take an early opportunity of buying samples of these choice goods at the most reasonable prices.

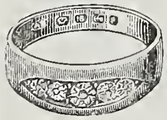
Keepers—9-Carat—The finest stock of 9-ct. Keepers in the Trade.

RINGS MY GREAT SPECIALITY.

LADIES' RINGS of the most choice description. I have one of the largest and best selections of Ladies' Gem Rings and Engagement Rings in the trade. Over 5,000 to choose from.

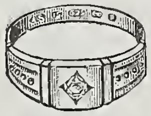


Ladies' Half-Hoop Gem Rings—All Diamond, 30/- to £50; Diamond and Ruby, 25/- to £50

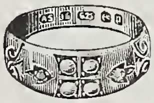


Ladies' Boat Set. Diamond Rings at all prices.

Ladies' Diamond and Gem Set Rings
of every other description, 15/- to £25.



Ladies' 15-ct. Engagement Rings, same as drawing, and other pretty designs; sell very well. Real Diamond. 12/6 each.

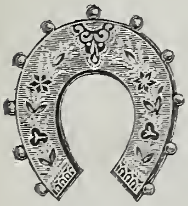


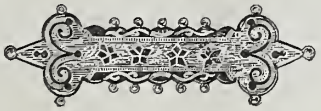
Ladies' 15-ct. Ruby and Pearl Gem Rings, like drawing, and various other most saleable patterns. 12/6 each.

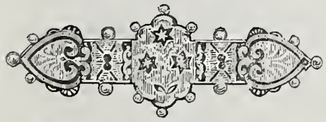
Gentlemen's Diamond Rings
at all prices.
Gentlemen's 18-ct., 15-ct., and 9-ct. Signet Rings in great variety.

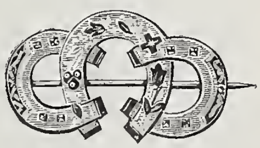
Special attention given to orders for **MASONIC JEWELS, SPECIAL PIECES, PRESENTATION KEYS, PRESENTATION JEWELLERY,** and **OFFICIAL JEWELS** of all kinds.

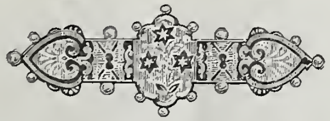
NEWEST DESIGNS OF 9-CT. HALL-MARKED BROOCHES.

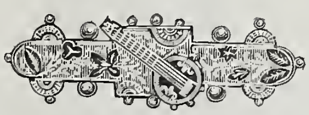












Special Line of 9-ct. Hall-Marked Brooches, various patterns, as drawings, and other pretty designs, all at 5/9 each.

These Brooches with Earrings to match, 8/9 per set.

SIMILAR BROOCHES, but larger size, **9-ct. Hall-Marked** ... ... 8/3 each.
,, ,, ,, with Earrings to match ... ... 11/3 per set.

A large variety of all the most fashionable and best value patterns in 9-ct. Gold Brooches always in stock.

A. SYDENHAM

gives special attention to all Colonial Letters, and will be pleased to receive Orders, if accompanied with Cash or satisfactory English References.

26, Frederick Street,
BIRMINGHAM,
ENGLAND.

ILLUSTRATED PRICE LISTS ON APPLICATION.

The Crystal Palace Electric Exhibition.

(FIRST NOTICE.)

THIS Exhibition is doubtless the most important of its kind that has been brought together, and when we compare it with any of its predecessors, we are immediately struck with the enormous strides made in the subjugation of this mysterious force to the multifarious wants and wishes of modern life, Here may be seen examples of the capability of electricity undreamed of a few years ago, from the delicate recording instruments, graphically depicting movements heretofore unknown, to the electric crane, lifting and throwing about such herculean loads as would surprise anyone. There is one branch of the indispensable service of electricity, which we regret to say is eloquently silent, and that is its application to horology and chronometry generally; although we are informed upon the very best authority that representatives of various Governments, Cities, and large Corporations have visited the Exhibition prepared to place large orders should they have found what they required.

In electro-synchronising, Schweitzer of Basil appears to hold a monopoly with exhibit No. 207. His system we are informed has made rapid strides on the Continent, 600 of his clocks having recently been ordered for Vienna. It has also commanded the good graces of the Parisians, amongst whom it is about to replace one of the best known systems which has not given altogether satisfaction. In this system there is one or more master clocks, which have full trains and pendulums, or lever escapements. The secondary clocks receive time every minute, which by the action of a lever on one tooth of the large wheel moves the minute hand. It will thus be seen that only two or three wheels are necessary for the secondary clocks. It is proposed in the adoption of this system in Paris to place far less numbers in the individual circuits, so that in case of an accident only a few clocks would be stopped. Messrs. Shippey Brothers, of 13 and 14, Cheapside, are the English agents for this firm.

It is only natural to expect to find Messrs. S. Smith and Son, of the Strand, to be to the front with an exhibition of what is first and foremost in many branches of the trade. If our memory serves us rightly they were one of the very first to appreciate the benefits of the electric light, and several indispensable contrivances, now common property in connection with electric lighting, were discovered by them. Their exhibit is the finest public demonstration of magnetisable and unmagnetisable (anti-magnetic) watches probably ever made. In one instance a magnet is placed over the loose steel parts of a watch, all of which it attracts. In the next we see the same parts anti-magnetic, all of which retain their position on the tray, although the magnet almost touches them. In another, steel-cased watches are allowed to attach themselves by magnetic action to an electro-magnet, but the former, totally regardless of their position, tick away undisturbedly the moments that are fast fleeting away from those who do not keep pace with the times. Another important exhibit of the same firm is a demagnetiser, the ocular demonstration of the value of which is enjoyed in instances which number thousands. Here may be found crowds who pass amongst the dynamos, where high voltage experiments are going on, and return with watches absolutely magnetised. Then follows a rush to Messrs. Smith's watch stand, and expressions, clad in not the most polite English, against magnetisable watches in opposition to the desirability of possessing an anti-magnetic timester. The demagnetiser employed by them is as simple as it must necessarily be effective. A powerful bar-magnet is made to turn round upon its centre at a great velocity, so presenting N. and S. poles alternately to the magnetised object. We also noticed the gentleman in charge of the stand was a practical man, and knew how to demonstrate the truth of what took place—an inestimable point very often lacking in exhibits of this sort.

The Coventry Watch Trade Association.

THE annual meeting of this association was held on February 9th, at the usual meeting place, the Hen and Chickens Hotel, Coventry. There was a very large attendance. Mr. Samuel Yeomans, president, was in the chair. In the report the committee congratulated the members upon the prosperity of the watch trade during the past year, and on the prospect of its continuance. During the year eight ordinary and three special meetings had been held, all of which had been well attended. Reference was made to the two visits of the Chairman to London in the capacity of witness in the prosecution of a London firm. In March a conference was held in Coventry of the delegates representing the associations of London, Liverpool, Prescot, and Coventry, and it was decided to form an Executive Council with a view to taking more united action whenever the necessity should arise. The committee earnestly requested the attention of manufacturers and workmen to the necessity of joining the association, and thus strengthening the hands of the committee, as there were several bills about to come before Parliament which would very materially affect the watch trade. The income of the association for the past year was £20 16s., the expenses had been £18 17s. 9d., leaving a balance to the credit of the association of £1 18s. 3d., added to which the amount brought forward of £15 8s. 6d., made a total balance of £17 6s. 9d.

The Chairman, in moving the adoption of the report, referred to the death of Lord Cheylesmore, who had been president of the association, and that of Mr. George Woodcock, one of the vice-presidents. Mr. Ballantine, M.P., who had been asked to take the presidency, had written expressing his pleasure in doing so, and stating that it was his desire to help the association in every way he could. He urged upon the trade the necessity of taking an interest in the association, which meant taking an interest in the welfare of the trade, pointing out that although strong enough to hold together in times of peace, if the war of prosecutions, with their attendant expenses, had to be resorted to, outlays would have to be met, and for this reason he was anxious to see the roll swell.

There could be no doubt that the Merchandise Marks Act had been very beneficial to the watch trade, but without that association and a great amount of influence that they brought to bear upon it, the watch clauses of the Act would never have been introduced, and but for some powerful association and united action the clauses would not be observed.

Councillor Drinkwater said he thought the Merchandise Marks Act did go far enough. He thought there ought to be still further action in the direction of having the word "foreign" plainly marked on the face of all foreign-made watches, so that purchasers would know clearly what they were buying. There was still a great deal of deception in foreign watches, for they were made to wind in the same way as the English fusees, and to set hands in the front. He strongly supported the making of every effort to obtain more members for the association.

Mr. Price, as a working man, urged there was as great need as ever for its existence, in protecting the trade against dishonest and unscrupulous makers. He also pointed out that there was very much for the association to do in promoting and watching legislation, and called particular attention to the proposal for the compulsory naming of watches by manufacturers, which he regarded as requiring the most important consideration by the trade.

Mr. T. D. Smith agreed that the Merchandise Marks Act had improved the trade of the city, and it would be a very serious matter if any important subject affecting the trade were brought forward in Parliament to find that the largest watch centre in England had no voice in what was being done.

The report was then adopted, and the following officers elected:—Mr. A. E. Benjamin, secretary; Messrs. Yeomans and Wests, trustees; Messrs. Bamford and S. Farren, auditors; Messrs. A. H. Drinkwater, C. Brown, C. Read, D. Cleaver, J. S. Wilday, J. A. Jelks, D. Hannah, W. Hopkins, and H. Oxley, committee. Thanks being passed to the retiring officers, it was agreed that an effort should be made by the committee to obtain more members.

The Markets.

SILVER.

This month has witnessed the neap-tide of the prices of silver. Opening low at $41\frac{13}{16}$, in two days it fell to $\frac{9}{16}$, a figure we have never had to record before; nor did it rise for two days, and then only to drop again, owing to the fall off in demand, reaching the lowest we remember, viz., $41\frac{1}{8}$, a price around which it seemed to hang for the rest of the month.

TIN.

On the whole tin has been rather unsteady with limits of about £1, opening at £44 7s. 6d., and after sundry up and downs it stands at £43 15s.

SPELTER.

Has been somewhat flat during several periods of the month, and not shown much alteration; it now stands at £21 12s. 6d.

QUICKSILVER.

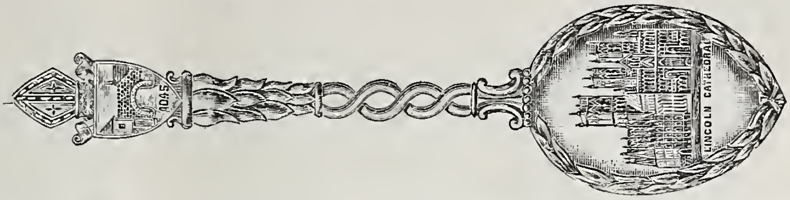
Quicksilver has perhaps varied a little more than usual, standing sometimes below £7, at others 7s. 6d. above it; at present it is £7 2s. 6d.

* * *

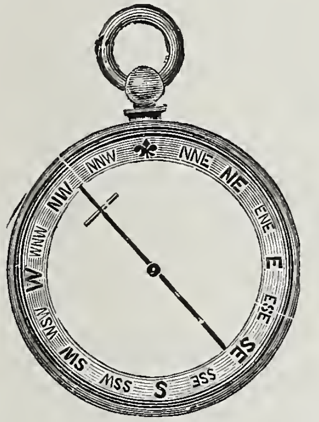
Beware of Forgeries.—It is coming to the ears of some well-known firms of high repute for their painted lantern slides that plain photographic slides bearing their name are being colored in an inferior manner and sold as their productions. Prosecutions are likely to follow if the offenders can be run to ground.

Sympathy from over the Sea.—Our esteemed contemporary, the *Canadian Trader*, one of the very best got-up trade journals on the other side, in the somewhat critical time now existing in our dominion beyond the sea, often gives vent to a little expression of wholesome sentiment. We are pleased to note that an editorial of last month is devoted to "A world-wide sympathy" over the death of the late Duke of Clarence, the tone of which can be gathered from the closing sentence: "at such a time even the Royal Family of an Empire so mighty as Great Britain may find some consolation in the thought that their sorrow is shared by loyal and loving subjects." We frequently have copies of the American Trade papers, which we should be pleased to forward to subscribers on receipt of postage.

Things New and Noteworthy.



Local or Souvenir spoons are increasing, and some of them will compare favorably with those of our American cousins, with whom the idea may be said to have originated. The above is one recently made by Messrs. Vaughton, of Gothic Works, for Mr. Odling, of Lincoln. It is what such a spoon should be—highly representative of of what it has to represent. The same firm have also made souvenir spoons for various other towns and cities, and we suppose would be able to find subject matter for any number more.



Of the various inventions brought out from time to time, perhaps none as an entire class can lay such a claim to absolute usefulness as the productions of Messrs. Francis Barker and Son of Clerkenwell Road. The above is an illustration of one of their productions, which we have found extremely useful, and one wonders why on earth most compasses are not similarly made, for it entirely dispenses with the use of magnifying glasses when looking over a map, the glasses of the instrument being in themselves magnifiers, and capable of being used as such.

APPLICATIONS FOR PATENTS.

(*Expressly compiled and contributed for this Journal by* Messrs. W. P. Thompson and Co., Patent Agents, 6, Bank Street, Manchester; 6, Lord Street, Liverpool; and 323, High Holborn, London, W.C.)

224.—"Improvements in watch-case springs," A. J. Lustig, London, 5th January, 1892.

255.—"Improvements in cases or containers for pince-nez, spectacles, and the like," F. Houghton, Liverpool, 6th January, 1892.

300.—"Improvements in and relating to snap-hooks for watch-chains," A. Mitchell, London, 6th January, 1892.

341.—"Improvements in brooch-pins and in the way of fasten-brooches and other similar articles," J. Elkan and A. J. Needham, London, 7th January, 1892.

744.—"Improvements in alarm clocks," H. D. Fitzpatrick, Glasgow (communicated by G. Offner, Germany), 14th January, 1892.

764.—"Improvements in pince-nez or double eye-glass," A. Liverpool, 14th January, 1892.

774.—"Non-setting lever escapement for use in travelling and other clocks," J. B. Smith, London, 14th Jan., 1892.

853.—"Improvements in sleeve links," H. F. Thake, London 15th January, 1892.

1,002.—"Transformation adjustable and changeable centres for brooches, lockets, pendants, earrings, scarf and hair-pins," G. E. Benton and C. M. McAnulty, Birmingham, 19th January, 1892.

1,080.—"Improvements in clocks," H. H. Lake, London (communicated by the New Haven Clock Company, United States), 9th January, 1892.

1,319—"Improvements relating to keys for locks, watches, and the like," H. J. Allen, London, 22nd January, 1892.

2,189.—"Improvement in fastenings for sleeves, wristbands, and other like purposes," F. W. Grierson and G. Goring, London, 4th February, 1892.

2,190.—"Improvements in and attachments for scarf pins and brooches," R. O. Williams, London, 4th Feb., 1892.

The Canadian Silver Cave.

WE have been asked by a very large silver house if we can give any particulars of the report now current of the finds of untold quantities of silver—in fact, a mountain of it in Canada. We have therefore great pleasure in supplying the following from our esteemed contemporary *The Western Jeweler*:—"A story which would make Rider Haggard turn pale with envy is being circulated in Windsor, Ontario, by Harry M. Poussett, a well-known business man of Sarnia. Mr. Poussett's romantic tale, which is well substantiated, goes back into the dim vistas of the past, long before the British conquest of Canada, when Frontenac and other French military pioneers ascended the St. Lawrence and founded the fort and settlement of Frontenac at its source.

"They found the wild and mountainous country lying back from the river swarming with Indians, and no Indian so poor that he could not show ornaments of gold and silver enough to make a white man's mouth water.

"The Frenchmen were dazzled with the display and made every effort to ascertain the source of so much wealth, but beyond vague hints about a mammoth cave, lined and roofed with precious metals, they were unable to learn anything. Some of the soldiery, tradition says, went so far as to seize an Indian, carry him to a lonely ravine and put him to torture, but no cruelty could drag the secret from him.

"With the advance of civilisation the Indians grew more tenacious of their secret, and to younger generations of red men it was not confided, for fear the wily whites might force or cajole it from them. In the course of years it became only a memory, told at camp fires by old men, together with the tales of the Wendigo and legends of old wars and conquests when the world was young.

"The story that is exciting Windsor at present is that the cave has been found. On the Monday following last Christmas a miner ran a vein of silver up against a cleft in the side of a rocky hill on a farm recently purchased by a syndicate headed by A. P. Poussett, Q.C., which was choked with brush and overgrown by raspberry bushes. Forcing his way through the opening the miner found himself in a narrow passage, walled with jagged rocks and descending at an angle of about forty-five degrees. He climbed down for about fifteen feet, and then darkness became so dense that he returned.

"The engineer in charge of the works was immediately informed, and, together with the foreman and the discoverer, proceeded to investigate. The passage, which grew wider as it progressed, extended downward about one hundred feet into the bowels of the earth. In the steeper places steps had been rudely cut out of the rock. Toward the end the incline became more easy, and ended in a species of flat vestibule, leading through an arch into a much larger chamber. The safety lamps borne by the explorers scarcely served to illumine the pitchy darkness, and so it was found necessary to procure an electric lamp of great power, which was occasionally used at the works.

"When this was lighted an extraordinary sight met the eyes of the miners. They found themselves standing upon a floor of rock, about forty feet in all directions, from which boulders and debris had been removed and lay in piles near the walls. The latter were of pink and white marble of most exquisite quality. On one panel, cut into the marble were the names: C. P. Meyers, John Smith, 1860.

"Strewed upon the floor were several mining tools, a smelting pot and some worn out moulds for counterfeiting. Here and there lay some stone spear and axe-heads and other Indian instruments. In one corner was a skeleton robed in skins and feathers. Around the walls rude chinks were cut, and the remnants of pine torches in some of them showed that they had been used for lighting purposes.

"But it was not until the lamp was turned upward that the riches of the cave became apparent. The light shone on myriads of small stalactites glistening with silver, while between them veins of gold and copper and patches of mica and iron pyrites threw back dazzling combinations of color that rivalled the cave of Aladdin in their magnificence.

"About fifty feet from the entrance was a sheet of limpid water, extending as far as the eye could see. A dugout made of an oak tree lay upon a shelf of rock. Satisfying themselves that it was seaworthy, the explorers entered it and punted their way across this subterranean lake for a distance of over 300 feet. There they found another platform leading into a second chamber fully 300 feet in circumference. Here the roof was not more than twenty feet high, and like the high chamber, was covered with stalactites about nine inches long. In one place the miners were able to reach the roof. They picked off about twelve pounds of the ore, which on being assayed subsequently was found to contain 11 dols. worth of pure metal.

"From this chamber low passages branched off in various directions, but whether they lead to similar chambers is not yet known.

"An effort was made to keep the discovery secret until the whole cave could be explored and surveyed and more land acquired, but the story leaked out through indiscretion and farm lands in the vicinity have sprung up to fabulous prices. The cave is being guarded by soldiers."

The Goldsmiths' and General Burglary Insurance Association.

ON February 5th the above company held their statutory general meeting at the Guildhall Tavern, the African hero, Capt. Cameron, C.B., in the chair. The chairman explained that the meeting was called simply in compliance with the law. However, he was able to place before them a number of figures which must be very gratifying to all our readers who took our advice and took shares in this well-managed concern. Although only established three months it has issued 570 policies, the premiums on which amount to £1,100, against which only two claims have been made, one referred to in our last issue for £49, and one for £6 5s. Both these were promptly met, much to the satisfaction of others, who immediately took policies in an office transacting its business in such a commendable manner. Mr. Layman called attention to the small costs of the formation of the company, which all told and of every description amounted to only £660; also to the fact that they were all business men, who were determined to make it a sound affair, and that as time went on they hoped to be able to offer even greater advantages. We should therefore advise our readers who have not taken out policies to do so, as original accounts will be first considered.

A PRINTER'S error of the simplest nature sometimes occasions much misunderstanding. Our attention has been drawn to the fact that the printers of our Diary advertisement pages by putting an "S" in the wrong place have transformed the well-known Birmingham firm of manufacturing jewelers, Henry Griffith and Sons, into Henry Griffiths and Son, whilst in the list of telegraphic addresses they have contrived to omit the word "Henry," a particularly unfortunate omission, seeing that there are others in Birmingham in the same line whose business title is very similar to that of Messrs. Henry Griffith and Sons. We trust, however, that no confusion has resulted in the minds of our readers who have desired to favor this excellent firm with their orders. Messrs. Henry Griffith and Sons' advertisement appears on another page in the present number.

The Lancashire Watch Company, Limited.

THE third annual meeting of shareholders of the above company, was held at the factory, Prescot, on the 11th ult., Mr. W. D. Houghton in the chair. There was a good attendance, and from remarks inadvertently dropped during the evening, it became evident that should any more capital be required, there are numbers amongst them anxious to subscribe it. The chairman very ably commented upon the various points in the report; one important one being the contemplation of ability to put *complete watches* upon the market during this year. Both the chairman and Mr. Hewett spoke in terms of the greatest satisfaction of the manner in which their "new movement" had been received—not that that is likely to surprise anyone who has seen it. Mr. William Clarkson, Liverpool, became a director. After so prosperous a year the usual thanks and compliments were passed and acknowledged. The following extracts from the directors' report are interesting:—"Your directors are pleased to announce that the new movements are now being made in considerable numbers, there being a large demand for the same, and it may be confidently anticipated that a considerable increase of profit should accrue to the company henceforth.

"During the year a machine shop has been built and is being fitted with necessary tools and machinery, and a three storey building is in course of erection, which is expected to be ready June next, for the accommodation of jewelers, escapement-makers, finishers, etc.

"The managing director fully hopes to place complete watches on the market during the next twelve months, and your directors are desirous that the balance of the preference shares should be taken up at once by the present shareholders and their friends.

PROFIT AND LOSS ACCOUNT FOR 12 MONTHS ENDING DECEMBER 31ST, 1891.

Feb. 13. 1891. Dr.	£	s.	d.
To dividend of 6 per cent. on capital subscribed, as per resolution of shareholders	1927	2	0
,, Interest on calls paid in advance	138	4	3
,, Machinery account, amount written off ditto ...	500	0	0
,, Goodwill and Trademarks, amount written off ditto	500	0	0
,, To balance...	1334	12	8
	£4,399	18	11

Dec. 31, 1890. Cr.	£	s.	d.
By balance brought forward...	4399	18	11
	£4,399	18	11

Dec. 31, 1890. Dr.	£	s.	d.	£	s.	d.
To stock on hand	12303	7	4			
,, Less cost of new movements to this date	1133	14	11			
Dec. 31, 1891.				11169	12	5
To purchase of raw materials ...	1538	15	4			
,, Wages and salaries	15393	6	10			
,, Tools and utensils	149	0	0			
,, Repairs to premises and machinery	437	1	11			
,, Rent, rates, taxes, gas, coal, & oil	653	17	11			
,, Travelling expenses, carriage of goods, printing and stationery, office expenses, law costs and charges...	466	6	3			
,, Interest and discount	777	10	7			
,, Interest on mortgage debt ...	277	19	0			
,, Directors and Auditors' fees ...	256	12	3			
				19950	9	10
,, Balance				4832	9	11
				£35,952	12	2

Feb. 13, 1891. Cr.	£	s.	d.
By Balance brought down	1334	12	8
Dec. 31.			
,, Sales	22664	11	3
,, Stock on hand	11953	8	3
	£35,952	12	2

BALANCE SHEET, 31ST DECEMBER, 1891.

To Capital: Dr.	£	s.	d.	£	s.	d.
5,000 £10 Ordinary Shares full paid up	50000	0	0			
Less calls in arrear	2686	10	0			
				47313	10	0
1,941 £10 6 per cent. Preference Shares fully paid up	19410	0	0			
Less calls in arrear	385	0	0			
				19025	0	0
				66,338	10	0
To Barr's Banking Co., loan on mortgage and interest				6635	15	8
,, Sundry creditors	2167	13	0			
,, Loans	3900	0	0			
				6067	13	0
,, Balance of Profit and Loss Account	4832	9	11			
Less Interim dividend paid on Preference Shares to June 30/91	297	15	4			
				4534	14	7
				£83,576	13	3
By Land, Buildings, and Machinery, viz.:						
Land and buildings—	12681	7	0			
Machinery, fixtures, fittings, fixed plant, tools, and loose plant	38444	14	7			
				51126	1	7
,, Purchase of Goodwill and Trademarks	5928	1	9			
Less amount written off ...	500	0	0			
				5428	1	9
,, Stock on hand				11953	8	3
,, Cost of New Watch Movements	6130	0	6			
Less value of Stock ditto ...	3384	0	8			
				2745	19	10
,, Stock of New Watch Movements				3384	0	8
,, Book debts				7155	16	9
,, Cash in hand and in Bank				1783	4	5
				£83,576	13	3

*

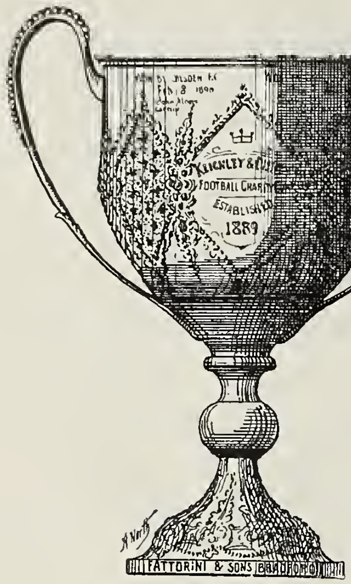
A COMPANY under the name of the Jewelers' Bankruptcy Syndicate, Limited, has been registered with a capital of £10,000 in £5 shares to carry into effect an agreement between J. L. Castiglione and R. Woolley, on behalf of this company for the acquisition of the undertaking of a dealer in watches, jewelry, bric-à-brac, pictures, etc., now carried on by J. L. Castiglione, at 63, St. Paul's Churchyard, and 9, Holywell Street, Strand, and to carry on and extend the same in all its branches. The company has been registered without special articles of association.

THE premises of Messrs B. Smith and Son, 183, Camberwell Road, were destroyed by fire on the 13th ult. The cause of the fire is unknown.

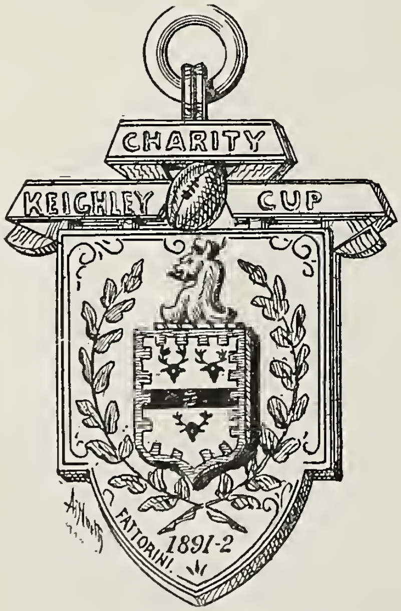
WE notice that Her Majesty's Stationery Office has decided to admit a limited number of approved advertisements in their two official publications, the *Trade Marks Journal* and the *Illustrated Official Journal of Patents.* We should think that this would be very much appreciated by manufacturers, as it will serve as a permanent protective record. All communications in reference to this branch should be addressed to the advertisement department, 5, Queen Victoria Street, London, E.C.

Keighley Charity Cup and Medals

THE cup is a massive silver vessel, simple yet beautiful in conception and execution, designed and manufactured by Messrs. Fattorini and Son, of Bradford, Yorks. A large diamond-shaped panel takes up the front, on which is engraved the inscription; and, on the reverse side, is inscribed the arms and crest of the Borough of Keighley. Between the panels are numerous geometrical ornamentations. The foot of the stem is richly decorated in like manner; and the stem itself, though simple, is in admirable relief to the whole. Ample space is provided for recording the names of the winning teams.



The medals, which are about half the size of sketch, are of solid silver, with a special gold one for the captain, are also manufactured by Messrs. Fattorini and Sons. Each medal is provided with a ring, so that it may be attached to the watch guard. The centre of the shield is occupied by the arms and crest of Keighley, emblazoned in the correct heraldic colors. The crest is a griffin's head, and this is surrounded by chastely engraved laurel wreaths.



The Artistic Treatment of Jewel and Address-Caskets.

By J. WILLIAM TONKS.

A Paper read before the Society of Arts, February 23rd, 1892.

THE subject I have chosen for this evening has been invested from the earliest times with an atmosphere of poetry and romance. It is a central element of one of the most interesting Greek myths; it furnishes a principal scene in one of Shakespeare's finest dramas, and it has in all ages been adopted as an apt and suggestive symbol. Thus an old poet of the Middle Ages exclaims:—

> O ignorant poor man! What dost thou bear
> Locked up within the casket of thy breast?
> What jewels and what riches hast thou there
> What heavenly treasure in so weak a chest?

It is more significant that in the most ancient literature to which we have access, a casket, a box, an ark, contained the most sacred religious symbols, while its golden summit reflected the messages of mercy from the Most High. We are told that Bezaleel (Exodus xxxvii. i. 9, revised version), the earliest goldsmith whose name has come down to us on the tide of history, made an oblong box, whose proportions were strikingly similar to those adopted for caskets in the best periods (2½ by 1½ by 1½), for the purpose of containing sacred symbols. The box itself was of acacia wood, this material being of an enduring character; and this body was lined and covered with gold. A crown, or raised moulding of gold, was placed along the upper edge. Then four rings of gold were fixed on the lower sides or literally "ribs" of it, through which were placed two thin poles or staves, also covered with gold, and by means of which it was carried about after the manner of a palanquin. The box was covered with a dome or "mercy seat" of gold, so made that it could attract light and focus its effulgence to the spectator. At each side were mystic, winged figures of cherubim, of beaten work in gold, facing each other, and with wings stretched on high towards each other, in striking resemblance to the style adopted in pourtraying winged figures in the most ancient Egyptian hieroglyphs.

This description is of importance, not only as marking a high degree of artistic achievement, but as also affording a kind of model upon which works of this kind in various countries have afterwards been constructed. It derives additional interest from its close relation to early Egyptian forms, and which to some extent it aids in explaining. In the magnificent series of illustrations prepared under the direction of Champollion le Jeune, during the invasion of Egypt by Napoleon I., there is a remarkable drawing which I have roughly figured. It is a box of ancient character, having a rim or moulding, the form observing the proportion of 2½ by 1½, and having in centre of body two open eyes, probably representing the unsleeping watchfulness of the Almighty. This box, curiously enough, has two poles or staves, and these proceed from the ribs, in fact they partly complete the form of a highly conventional lion. The lion, as suggestive of power, is evidently symbolic. Another singular figure, also from Champollion, is an ensign, apparently formed of a sloping side box, with an animal, perhaps a fox, seated on top. I fear this is attributable to a much later period, as there is in South Kensington Museum a wooden box very similar in shape, but without any figure surmounting it, and which may be either a casket, or a *chasse*—a depository of the relics or ashes of the dead.

Coming from Egypt to Greece, a true historic transition, we first begin to find the jewel casket. This was called by the Greeks and Latins "pyxis," probably because originally made of box-wood, and in it they placed and kept for safety their parures or jewels. The simple box-wood caskets, quite adequate in those early days, are often figured upon the exquisite vases that have come down to us. I have here enlarged two specimens from vases in the famous Englefield collection. They are oblong, simple in form, consistent with their use, and with the purpose they were designed to serve, the decoration being always in conventional and geometric bands. The proportion usually adopted is still that of the sacred box or ark of the Israelites, $2\frac{1}{2}$ by $1\frac{1}{2}$ by $1\frac{1}{2}$. I know but of one example in the cubic form, but that again illustrates the principle. It is that of the statue of Venus rising from the sea in the Chigi Palace. The goddess has one of these oblong caskets at her feet, thus sufficiently indicating their use and the devotion of their contents to the adornment and service of beauty.

It is a singular and suggestive fact that in the Greek mythology, a box or casket is intimately related to the first mortal woman who was created. Prometheus, one of the earliest mortals, whose name has ever since been held as the synonym of Genius, exceeded all others, we are told, in ability and artifice, so much so that he was able, at a famous sacrifice, to deceive even Jupiter, the chief of the immortal gods. To punish him and his fellows, Jove is said to have taken fire away from the earth. But, assisted by Minerva, the goddess of Wisdom, the undaunted Prometheus climbed the heavens, and stealing fire from the chariot of the Sun, brought it down with him to the earth. The father of gods and men, enraged at such audacity, ordered Vulcan to make a woman of clay, and, after giving her life, to send her to Prometheus, with a casket of costly presents from the gods. As soon as she was endowed with life, all the gods and goddesses of Olympus vied with each other in presenting her with gifts. Beauty and the art of enrapturing the children of men she received from Venus, and from the Graces all their captivating charms. Apollo taught her to sing divinely, Mercury gave to her the most persuasive eloquence of a woman's tongue, and Minerva blest her with a wise discretion. Hence she was called Pandora, from Greek words signifying "all-gifted." But Jupiter himself presented her with a last and fatal gift. It was a casket filled with innumerable ills, which she was desired to offer to the mortal who espoused her. Mercury himself conducted this lovely creation to Prometheus, clad in all her charms. The wary and sagacious mortal, whether from the lofty disdain born at times of highest genius, or from a cool judgment which led him to suspect that there was danger in the all too glorious vision, to the surprise and anger of the immortals, declined the proffered bliss. Unfortunately for poor humanity, Prometheus had a brother, Epimetheus, less wary, or more sensible to female charms, who was entranced by the beauty of the heaven-descended maiden, and immediately rushed into her arms. He married her, received the box, opened it in haste, when there issued from it a multitude of evils and distempers, which speedily dispersed themselves over all the earth, and which have not since ceased to afflict mankind. He shut the casket again in haste, but nearly all were gone. Hope alone, which Jove had compassionately enclosed in this unhappy gift, had not time to escape from the box. Hope, therefore, remains as the only consolation left to unhappy mortals amid all the ills that flesh is heir to.

This beautiful myth is so closely related to my subject that I could not forbear recounting it. The curious may find in it a singular analogy, with the symbolic allegory of the origin of evil, given in the most ancient portion of the Hebrew Scriptures. The Greek form is much later, is less direct, and more poetic in treatment; but the fact that, in Greek myth, Deucalion, the grandson of Pandora, is the Noah of the Grecian Flood, seems to emphasise the conclusion.

(To be continued.)

In and Out the Courts.

What Constitutes a Watch Once More.—Mr. Justice Day and a jury in the recent case of The "England," s: Marples v. the National Steamship Company, in the Court of Queen's Bench, have given a different idea of what constitutes a watch from that given in the "test" case—so much for "test" cases! Briefly stated, the facts are these: 112 watch-movements were consigned from America to England to be put into English cases—let us hope to be stamped "Foreign make"—and these got lost in transit. Now it appears that Section 503 of the Merchants' Shipping Act, 1854, indemnifies the owner of any sea-going ship against the loss or damage of any gold, silver, diamonds, *watches*, jewels, or precious stones taken on board, unless the true nature of the property is declared in writing on the bill of lading. The question to settle was whether these articles were or were not watches, and the jury returned a verdict that the movements, which had no dials, but were in every other respect complete and "going," were not watches. A decision of great importance this.

An Important Case.—A very important case was decided on Feb. 11 in the Queen's Bench Division. Mr. Scott, the Plaintiff, Jeweler, in Hull, last year suffered the loss of a large quantity of jewelry, valued at £4,000, by a burglary committed on the premises. In consequence of the abstraction of this property, Mr. Scott brought two actions on policies of insurance covering the loss by the burglary—one against the Security Society and the other against the Mercantile and Guarantee Company. After the actions had proceeded some way, it was agreed that the action against the Security Company should be tried first, the other not to go on until that was disposed of. The substantial defence to this case was that the jewelry had been stolen by persons in the plaintiff's employment, and that, there being an exception in the policy relating to loss of that kind, the defendants were not liable. The defendants also pleaded that the plaintiff had been negligent with respect to the jewelry. Some months after the loss of the jewelry, one of the plaintiff's assistants discovered a large quantity of lost jewelry tied up in a parcel on the plaintiff's own premises one morning when the shop was opened. The parcel was immediately handed over to the police who had been investigating the case. The action against the Security Insurance Company was settled by the plaintiff accepting a sum of money, and the present action against the Mercantile Company remained. The defendants were forcing the plaintiff on with that action, and an order had been made that it should be tried at the forthcoming Leeds Assizes. The plaintiff now called upon the Chief Constable of Hull to give him back his jewelry, and he declined to do so, except under the order of the Court, on the ground that an agreement was come to between the parties that he should hold the jewelry until the action had been tried. The learned counsel submitted that it was immaterial to consider whether such an arrangement had been arrived at or not, as the jurisdiction of the Court did not depend upon agreement between the parties, but depended on the rules giving the Court power. Having heard counsel on the other side, the Court decided that the appeal must be allowed, and gave judgment accordingly, the jewelry to be returned to the plaintiff.

Pawning in the Jewelry Trade.—At the Central Criminal Court, on the 12th ult., David Maurice, Jeweler, pleaded guilty to pledging three bracelets within four months of the presentation of his bankruptcy petition, also to concealing two other bracelets which he should have discovered to the trustee, and which he had pledged in March, and afterwards repledged after the filing of the petition. It was admitted that the defendant had made frank answers in his public examination and had spoken the truth as to the causes of his failure. The importance of the case arose from the fact of a decision which was given at that court in May, 1891, before the late Recorder, that it was a legitimate thing for jewelers to pledge articles consigned to them on approbation. That decision, however, the prosecutor in this case desired to repudiate as distinctly untenable. The Treasury counsel said it must be perfectly clear that the pledging by the retailer of the property sent to him by the manufacturer—whether jewelry or anything else—must be considered as out of the ordinary course of business, and was not good trade; nor could a legal trade custom be established where such a condition of things existed. The case referred to was that of the Queen *v.* Imperiali. It was only just to say that in that instance the alleged trade custom was strongly repudiated by the manufacturer, but it was upheld by some pawnbrokers. The mischief of the decision had been so great, that it was most desirable to inform the trade that this decision could not be acted upon, and the plea of guilty here recorded ought to be of public value more important than the plea itself. Defendant's liabilities were £3,000; his assets £865. Mr. Grain, on behalf of the defendant, said that he pleaded on his advice. He had explained that certain acts alleged against him would constitute a misdemeanour under the Debtors' Act unless he (defendant) could satisfy the jury that there was no intention in what he did to defraud his creditors. The evidence, however, was of such a character that in his (the learned counsel's) opinion the defendant would have been unable to convince the jury in his favor. He desired at once to repudiate the decision in the case referred to by Mr. Matthews. The obtaining goods from creditors and pawning them, no matter for their under-value or full value, could not, he submitted, under any circumstances be considered a legitimate custom of trade. It was, notwithstanding, a very prevalent custom, no doubt, of getting goods on approbation for the purpose of sale, and then the persons, either having no capital at all, or having lost their capital, pawning them for the purpose of raising money to tide over their temporary pecuniary embarrassment. This was a most pernicious custom, and the sooner it was stopped the better. Mr. Commissioner Kerr: What is the date of this case? Mr. Grain: May, 1891, my Lord. Mr. Matthews said that the defendant had been a bankrupt before, and for a much larger sum. Mr. Grain said that the prisoner's present position could only be explained by saying plainly "that he had got into a muddle with his business" by his system of obtaining goods and then pawning them. Mr. Commissioner Kerr said that the object of the case being to end a vicious system, and as the prosecutions were taken not so much with the view to punish offenders as to deter others from committing crime, under the circumstances of this case he should order the defendant to enter into recognisances of the surety of £200 to come up for judgment when called upon. In reply to an observation of counsel, Mr. Commissioner Kerr said that he repudiated the doctrine which appeared to have been laid down in the case of the Queen *v.* Imperiali, and he was of opinion that the pledging of the property under those conditions was a distinct contravention of the 15th Sub-section of the 11th Section of the Debtors' Act.

The Danger of Charging a Person with Theft.—A case was heard in the Queen's Bench Division on Feb. 5th in which Walter Munroe, a music-hall artist, sued a peripatetic jeweler named Abrahams for damages for slander. It appears that while performing at Margate the plaintiff went to a bar where he saw Abrahams displaying some jewelry. Upon being informed of the new arrival, Abrahams immediately showed him a diamond pin, and subsequently some other things, which the plaintiff handed back to him. Subsequently, finding that he had not got the pin, the defendant accused the plaintiff of having it, and even went outside and tried to get a police officer to take him in charge. In defence, Abrahams argued that he did not accuse him of stealing it, as he thought he was playing a practical joke with him, and got the policemen in to try to frighten him out of it. The jury found for the plaintiff, damages £75.

Window Smashing Again. — The noble art of brick throwing is by no means confined to the County of London. Mr. Wacholder, of Market Place, Hull, recently had his window smashed in this popular fashion, and about £400 worth of goods stolen. The perpetrator was seen to throw the brick and decamp, and was eventually caught, although only part of the proceeds were found upon him. He will be out of the way of loose bricks now for the next six months.

A Shocking Elopement.—We sometimes think we are made up of laws, but it is interesting to remember that we can often get justice not obtainable elsewhere. A most painful instance of this is the case of a young French jeweler, who has just fled from his maternal roof to England, bringing with him 875,000 francs, the property of his widow-mother. But there is no law in France to protect parents from the robbery of their children; consequently she is powerless in the matter.

Remarkable Capture of a Thief.—Robert Puisaye, 28, a foreigner, describing himself as of no occupation, and giving an address in Charing Cross, was recently sentenced to six months' imprisonment at Marlborough Street for stealing a diamond brooch, valued at £18, belonging to Mr. Maurice Moses, a jeweler, of Oxford Street. Puisaye called at Mr. Moses's shop and inspected some jewelry, giving Count Puisaye as his name. Almost immediately after he was gone a diamond star was missed, a fact of which Mr. Moses apprised the police. Mr. Moses then set out to make independent inquiries at West End jewelers' and pawnbrokers' shops to see if he could come upon any trace of Puisaye or of his property. After having called at several places without success, he went into Cranbourne Street, and pushing open the door of the shop of Mr. Hawes, a pawnbroker, found himself, to his astonishment, face to face with the man he was in search of. Puisaye, seeming to recognise him, at once ran into Charing Cross Road, with Mr. Moses in close pursuit, crying, "Stop thief." On the way to the police-station he threw away an envelope, which was found to contain a contract note with Mr. Attenborough, of Oxford Street, for the pledging of the missing brooch. An earring and a pearl brooch, which Puisaye also pawned with Mr. Attenborough, were found to be Mr. Moses's property.

A Gutter Bargain.—In the month of November last a confiding fellow named Edward Brian whilst walking near the curb had the pleasure of seeing a gentleman pick up a ring, which by trying on the first plate-glass window at hand they pronounced a diamond. However, the good-natured finder was willing to forego his claim for 9s. Since then Brian has lost faith in gutter bargains, and his only hope in life was that he should come across another. The other night that wish was granted. But oddly enough the memory of the rogue was at fault, otherwise he would not have attempted the second time on the same individual. However, Brian was able to keep him in conversation until a constable arrived, when he was given into custody.

The Responsibility of Jobbers.—A somewhat important case was recently decided at the Clerkenwell County Court in which Israel Kurman, dealer, sued Messrs. Peck and Levell, St. John's Square, for £4 10s., the value of a clock case, and damages. On the other side there was a counter-claim for 6s. 6d., work done. It ultimately became evident that in altering the method of decoration from marbling to bronzing a flaw in the casting had been made visible, which was filled and invisible under the former conditions. This having been proved to the judge's satisfaction, judgment was given for Messrs. Peck, with costs, together with 6s. 6d. for repairs.

Another Clock Case.—At the Brentford County-court, before his Honor Judge Stonor, the case of Stevens v. Gore was heard. The plaintiff sued the defendant, William Gore, a painter and house decorator, of Chaucer Road, Acton, to recover the sum of £4, in respect of an antique clock-case entrusted to the defendant for repair. Defendant put in a counter-claim for £10, for labor done and material supplied in repairing and renovating the case. His Honor said that the defendant having a lien on this case, until the plaintiff had paid him for its repair, the action now brought by the plaintiff must fail, and the counter-claim must fail with it. He allowed the defendant cost on the counter-claim, and intimated that the latter would still have his cause of action in respect of the repair of the case.

More Counter-claims at Liverpool.—Osmund Turner sued William Parkes, Watchmaker, of Seymour Street, for 8s. 6d. damage to a watch. Mr. J. C. Clarke was for the plaintiff and Mr. D. J. Geddes for the defendant. The plaintiff said he left the watch to be repaired for 1s. 6d., but the defendant so damaged it that it cost him 8s. 6d. to have it put right. This the defendant denied, and added that when he examined the watch he found it much out of repair. He told the plaintiff, who would have nothing more done to the watch, and took it away. His Honor gave judgment for the defendant, with costs.

Gazette.

Bankruptcy Record.

Feran, Stephen, Jeweler and Jet Ornament Manufacturer, late 15, Victoria Square, Whitby; now 28, Summer Hill Terrace, Birmingham.

List of Creditors—

		£	s.	d.
Meyback, Lang, and Feltheimer ...	London	40	8	6
Brandon Bros....	Birmingham	16	11	10
Cox, W. F.	,,	28	18	10
Downing, A.	,,	22	18	10
Dinwoody and Willmott	,,	30	4	3
Forrester Bros.	,,	24	2	6
Groves, John	,,	77	1	10
Leather, W. H.	,,	107	16	10
Loveridge, George	,,	75	17	9
Levi and Salaman	,,	27	17	7
Mackenzie and Goode...	,,	26	11	6

Hurlston, Alfred, Watch Manufacturer and Watch Material Dealer, trading as A. Hurlston and Co., 9, Russell Terrace, Chapel Fields, Coventry, and Bridge Street, Banbury. Receiving Order: Jan. 22. First Meeting: Official Receiver's, Coventry, Feb. 5 at 12. Examination: County Hall, Coventry, Feb. 29 at 2.30. Adjudication: Jan. 23.

List of Creditors—

		£	s.	d.
Bourgeous, —	London	159	0	0
Emery, Brevine	Coventry	25	0	0
Hurlston, Miss Amy	,,	514	0	0
Read and Son	,,	21	9	0
Shaw, —	,,	14	10	0
Partly Secured Creditors.				
Bankers' Claims		506	1	5

Marshall, Henry Robert, Optician, 18 and 19, Minster Street, Reading. Receiving Order and Adjudication: Feb. 6. First Meeting: Official Receiver's, 95, Temple Chambers, Temple Avenue, London, Feb. 25. Examination: Assize Courts, Reading, Mar. 10.

Skerritt, Robert, Watch and Clock Maker, Jeweler, and Optician, High Street, York Town, and 3, Kelsey Cottages, Blackwater, late 168, Stamford Street, Blackfriars. First Meeting: 24, Railway Approach, London Bridge, Jan. 29 Examination: Town Hall, Guildford, Feb. 9. Adjudication: Jan. 19.

List of Creditors—

		£	s.	d.
Grimshaw and Baxter	London	10	0	0
London and South-Western Railway Company	,,	10	10	0
Stotterd, General	Camberley	10	0	0
Stotherd, Mrs....	,,	10	2	0
Frasier Bros.	Frimley	10	1	4
Boncherett, Miss	Sandhurst	13	0	0
Grieves, A.	York Town	12	5	11

Deeds of Arrangement.

Cato and Co. (Logan, William Arthur, trading as), Watchmaker and Jeweler, 39, Oxford Street, Chorlton-upon-Medlock, and 131, Upper Moss Lane, Hulme, Manchester. Trustee: Marshall Preston, 21, Kennedy Street, Manchester, C.A. Secured creditors, £4 10s. Dated Feb. 5; filed Feb. 9; unsecured liabilities, £188 10s. 3d.; estimated net assets, £73 8s. 7d.

List of Creditors—

		£	s.	d.
Whittaker, Olga	Cheshire	45	0	0
Hughes, William	Manchester	21	9	6
Ross, Arthur	,,	35	0	0
Warmisham, John	,,	15	12	10
Meyer, Samuel	,,	10	10	0
Grantham, William	,,	10	10	0

Milner, Sarah Louise Leman (trading as Cooper, J., and Son), Silversmith and Jeweler, 11, London Street, Norwich, Norfolk, and residing at Brunswick House, Warwick Road, Olton, near Birmingham (wife of Robert Milner). Trustee: Charles Larking, Norwich, F.S.A. Dated Jan. 14; filed Jan. 20; unsecured liabilities, £1,253 6s. 1d.; estimated net assets, £1,099 11s. 8d.

Cubin, William Holloway, Jeweler, 7, Crown Street, and 10, Navigation Road, Northwich, Chester. Composition of 5s. in the £, payable on or before Feb. 13, 1892. Dated Jan. 28; filed Feb. 1; unsecured liabilities, £70 6s. 2d.

Seymour, Charles Windsor, Watch and Clock Maker and Silversmith and Jeweler, 27, High Street, Windsor, Berks. Trustee: Edward P. Wilson, 11, Old Jewry Chambers, London, E.C., C.A. Dated Feb. 3; filed Feb. 9; unsecured liabilities, £3,488 8s. 2d.; estimated net assets, £1,500.

List of Creditors—

		£	s.	d.
Atkin Bros.	London	17	18	2
Barber, —	,,	75	0	0
Grimshaw and Baxter	,,	16	10	5
Troup and Sons	,,	2,708	3	0
Hayes, T.	Birmingham	34	2	0
Reynolds, J. L.	,,	20	1	5
Osgood, —	Newbury	250	0	0
Secker, E. O.	Slough	17	10	0
Brooks, —	Windsor	13	13	2
Bedborough, —	,,	20	0	6
Holderness, W. B.	,,	35	18	3
Neville, Reid, and Co.	,,	29	7	0
Peters and Son	,,	25	5	6

Thompson, Henry Gardner, Jeweler, 259, Lord Street, and 41, Scarisbrick New Road, Southport. Trustee and Assignee: Clara Thompson (widow), 109, Eastbank Street, Southport, Jeweler. Composition of 13s. in the £, payable by three equal instalments, on April 1, June 1, and Aug. 1, 1892, secured by assignee, and assignment to her of stock-in-trade, fixtures, book debts, &c., upon trust, &c. Secured creditors, £32. Dated Feb. 26; filed Feb. 28; unsecured liabilities, £890 3s. 6d.; estimated net assets, £636 13s. 3d.

List of Creditors—

		£	s.	d.
Bendon, J., and Co.	London	15	0	0
Griffith, William, and Son	Birmingham	227	11	9
Blanckensee, Mayer	,,	125	17	4
Allen and Martin	,,	45	6	7
Constantine and Floyds	,,	23	12	5
Finger, A.	Liverpool	18	6	0
Shoeps Bros.	Manchester	24	9	0

Thompson, R. E.	Southport	25	0	0
Thompson, Mrs. C.	,,	316	16	5
Bentinck, William	,,	26	6	8

Walters and George (George Joseph Reed, trading as), Jeweler, 270, Regent Street, W. Trustee: Ambrose William Boughton, 52, Gracechurch Street, E.C., accountant, with a committee of inspection. Deed of assignment upon trust with power to trustee (with creditors' assent) to carry on the business for a period of eighteen months from date hereof (or more), with a view to the gradual liquidation of the estate. Secured creditors, £2,616. Dated Jan. 27, filed Jan. 30, 1892; unsecured liabilities, £2,055 1s. 7d.; estimated net assets, £2,868 14s. 2d.

Private Meeting.

Tucker W., and Co., Jewelers and Silversmiths, Clare Street, Bristol.

STATEMENT OF AFFAIRS.

Liabilities.

	£	s.	d.	£	s.	d.
Unsecured Creditors				2,765	10	1
Creditors fully secured	574	0	0			
Estimated value of securities ...	655	18	0			
Surplus to contra	81	18	0			
Creditors partly secured	828	14	4			
Less estimated value of securities	91	11	0			
				737	3	4
Creditors for rent, rates, taxes, wages, &c., to be paid in full, see contra ...	78	0	0			
				3,502	13	5

Assets.

	£	s.	d.	£	s.	d.
Stock-in-Trade at cost less 20 per cent.				2,314	12	7
Book Debts, viz.:—						
Good	83	19	8			
Doubtful	1	16	9			
Bad	22	16	10			
	108	13	3			
Estimated to produce				84	11	11
Cash in hand				8	18	10
Fittings, fixtures, and utensils, at value				162	9	6
Surplus from securities held by creditors fully secured, as per contra				81	18	0
				2,652	10	10
Less creditors for rent, &c., to be paid in full				78	0	0
				2,574	10	10
Deficiency				928	2	7
				£3,502	13	5

At a meeting held at the Queen's Hotel, Birmingham, on the 28th ult., it was resolved, "That if security to the satisfaction of the chairman, Mr. Mole (Manton and Mole), and Mr. E. T. Collins, of Bristol, for the last two instalments of 13s. 4d. in the £, payable by equal instalments at 4, 8, 12, and 16 months, be forthcoming, this meeting agrees to accept same, and recommend its acceptance to absent creditors; failing such security being tendered within 10 days the debtor be called upon to execute a deed of absolute assignment to Messrs. E. T. Collins (Bristol), and G. G. Poppleton (Birmingham), as trustees, and Mr. Woodward (Manton and Mole), Mr. Green (Sharp and Green), and Mr. Knibb (Sloan and Carter), as a committee of inspection."

Notices to Creditors.

Abbatt, John Joseph, Watchmaker and Jeweler, 32, Stramongate and 15, Stricklandgate, Kendal, Westmoreland. Deed of Assignment executed Jan. 11. Claims to T. G. Thompson, 51, Highgate, Kendal, by March 9.

Edwards, William Jones, Jeweler and General Dealer, Church Place, Penrhyndendraeth, Merioneth. Second dividend of 10½d. at Official Receiver's, Chester, Feb. 9.

Grayson, Frederick, Electro-plate Manufacturer, trading as B. Grayson and Company, 16, Garden Street and 19, Havelock Street, Sheffield. Proofs for intended dividend by Feb. 18. Trustee: Official Receiver, Sheffield.

Lesser, Solomon, Jeweler, 3, Alfred Place, Bedford Square, late 19, Frith Street, Soho, and 54, Shaftesbury Avenue. Application for debtor's discharge: High Court of Justice in Bankruptcy, Feb. 26, at 11.

Marsh, Charles Henry Cromwell, Watchmaker and Jeweler, 8, Belgrave Road, and 2, Five-Post Lane, Dover. Proofs for intended dividend by Feb. 8 Trustees: E. P. Wilson, 11. Old Jewry Chambers, E.C., C.A.

Taffinder, Frank, Watchmaker and Jeweler, 40, High Street. Rotherham. Proofs for intended dividend by Feb. 18, Trustee: Official Receiver, Sheffield.

Dissolutions of Partnerships.

Allan, R. and A., Watchmakers and Jewelers, Cumnock. Dec. 31, 1891, by retiral of the trustees of the late Robert Allan. Debts by Alexander Allan, who continues under the same style.

Cloud and Shapland, Gold and Silversmiths, Watchmakers, Dealers in Works of Art, and Pawnbrokers, 207, High Holborn. Jan. 18. Debts by Charles William Shapland.

LETTERS TO THE EDITOR.

THE CERTIFICATE OF THE BRITISH HOROLOGICAL INSTITUTE.

To the Editor of The Watchmaker, Jeweler and Silversmith.

Dear Sir,—We notice in your December issue a letter from a correspondent on the subject, "The British Horological Institute, its Diplomas, and Low-priced Watch Repairing." There is in this town (not a hundred miles from Manchester) a jobbing watchmaker (of marvellous skill) who professes to clean watches at the foregoing figure, and will also do other jobs at equally low prices. In his window you will find a diploma of the Horological Institute. Would you kindly inform us benighted duffers: First, What or where is the Horological Institute? Second, How are its diplomas to be obtained (whether by *viva voce* examination or correspondence, or does a candidate send in specimens of his work, or is the work done before an examiner of the Institute in London)? If the examination is not conducted in London, what steps are taken by the examiners to prove the *bona fides* of the work and knowledge of candidates? We should also like to know of any further point relating to the cost of diplomas, curriculum, etc. By furnishing the foregoing information you would greatly oblige a suspicious group of

"Pivoters."

We do not publish the foregoing letter from any want of appreciation of the work of the Horological Institute. Fortunately, we know it well, and have referred to it with no uncertain sound on previous occasions. We have no doubt that someone able to speak with more authority will answer these questions, and we shall expect to find some interesting points opened up. We may remark, however, that the letter comes from some hundreds of miles off, which may render the possibility of the unfamiliarity of the writers with this, our trade Institution.

J. F. T.—The directory most suitable for you would be that published by the *Jewelers' Weekly*, 41 and 43, Maiden Lane, New York. The price is 12s. 6d. It appears a complete, well got-up, plain, and easily useable directory of the U.S. All the trades are classified, and each State treated separately. We consider this marvellous value for the money.

An inquirer asks "What constitutes a Watchmaker and Jeweler?" We should say making watches and jewelry. If he means what are the circumstances under which he may expect trade terms, we should say, the being engaged in the sale of watches or jewelry as at least part of the means of making a living, under a Government licence for the same.

The

Watchmaker, Jeweler and Silversmith.

Edited by W. J. LEWIS ABBOTT, F.G.S.

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LITERARY CONTRIBUTIONS.—Manuscripts should be written clearly on one side of the paper only, and should in every case be accompanied by the name and address of the sender; where payment is expected, a definite statement to that effect should be made. The Editor cannot be responsible for missing MSS., but every care will be taken of copy submitted for consideration.

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The World's Exposition.

TO exhibit or not to exhibit? That's the question. Whether 'tis better to bear the evils of an unfully-developed business, or rush with the prodigies of our brain, and spread them before our somewhat alienated cousins, who will possibly adversely criticise them, probably copy them, but certainly in return will close their markets against them, by the imposition of an annihilating import-duty of 50 or 60 per cent. But while we are deliberating we are struck with the phenomenal activity displayed on all sides, from frozen Siberia to tropical Africa, from East to West, and from North to South, big States, little States —in fact every *state* in which man finds himself to-day, "civilised" or "uncivilised," is thinking about this wonderful Exposition. Ministers and trade chambers are impressing upon the Governments the necessity of being creditably represented before this grand jury of a hundred nations; and Governments and powers that be are just as readily coming forward with their millions, so determined are each that they shall be well represented. Obviously, then, there is a subjective aspect of this question which thinking people consider very important. If there were only the one nation upon whose soil the exhibit is made to be considered, the opening argument might perhaps be adduced, but such is not the case. Every country in the world will be present and sit in judgment upon what is shown, and if in a court of law which—ostensibly at all events—professes to be guided by justice and equity the verdict depends more upon how the case is brought into court and represented, than upon the innocence or guilt of the defendant, how much more in a case like this, where there is no appeal—save to the passing fancy of those who saunter disinterestedly through the exhibits, looking for what will please them best—is it an absolute necessity to be faithfully represented, and so prevent a redistribution of seats through non-appearance? But let us first take the case of America: there can be no denying that in many quarters our trade with the States has been crippled by MacKinleyism. These tariffs, however, are quite as likely to be set back again as not, in view of which it is necessary that we should maintain our prestige with our cousins, so that when their paternal government allows them to buy the best goods in the best markets, they will have a stock of names, familiar in their mouths as household words, of manufacturers and dealers, by whom all their wants can be supplied.

Next let us take the copying idea. Who is the real "copier"? Truly "a man's foes are those of his own house," the plagiarist who is to be abhorred is to be found at home—he who gets one of your productions and makes it up in an inferior style, takes it to the house you are supplying, and perhaps have been supplying for many years, and shows them how much cheaper he can do things than you. If American houses want to copy, they need not go to the Exhibition to get British patterns. For many years most of the large houses pay at least yearly visits to our Metropolis, when they can easily procure anything that meets their fancy. Then again, most of the large houses do more or less business with America. We were surprised the other day to find the extent of trade we do with America. Several American houses wrote us for the addresses of houses in this country who deal in certain things. Upon speaking to several of our manufacturers we were astonished to hear them enumerate the number of American firms with which they do business. Then again, how many British firms now have establishments in the United States? Indeed, "London, Paris, and New York" is gradually becoming considered to be the correct and almost indispensable heading to a bill; and further, with America, they have confidence in that guarantee of superiority of British *quality*—the Hall Mark. We have sold some tens of thousands of pounds' worth of English productions, but we never saw an American yet who was not content in accepting the Government guarantee; the more so as instances are by no means few and far between—if papers are to be relied upon—when ten, eight, and even six carat goods are stamped "14 K," which, of course, while it asserts nothing, leads people to suppose the articles to be 14-carat gold. Under these circumstances it is only natural that they should have a good opinion of Uncle John's gold and silver productions, an opinion which deserves the strain of every effort to foster and cultivate, and as such we hope our large manufacturers and large retail houses will see their way clear to make a truly representative show, creditable alike to themselves, the trade they represent, and Britannia—the mother of us all—and show that she not only rules the waves, but that she rides triumphant over the world in arts and manufactures.

Lectures on Gemmology.—On Tuesday evening, April 5th, at eight o'clock, the Editor will deliver a lecture on the Color of Gems, at the Horological Institute, Northampton Square. It will be illustrated by oxy-hydrogen limelight, and will cover a large field gone over in the course of lectures delivered. We shall have a few tickets, which can be had either by application at our offices, or to Mr. Abbott, Seale House, The Vine, Sevenoaks, Kent. There will also be a demonstration at the Museum of Practical Geology, Jermyn Street, on Monday evening, April 11th, at eight p.m. (by kind permission of Professor Rudler), and another at the Natural History Museum, South Kensington (Mineral Department), on Saturday afternoon, April 23rd, at three o'clock. There will be no tickets necessary for the demonstrations.

More Diamonds in the Arizona Meteorite.

SOME time ago we gave an account of the discovery of diamonds in meteoric iron from near Canon Diablo, Arizona. Encouraged by this accidental discovery, Professor Foote has made over two hundred sections of this valuable relic of other worlds, with an enthusiasm against which that exhibited by a gold-seeker would usually pale, for it must be remembered that many of the masses have a commercial value of three figures before they are operated upon. To destroy them means playing with a fortune. Nevertheless the work of slitting and polishing has gone on month after month, and at the end of February last the Professor was rewarded by a grand treasure of the same nature as the one to which we have alluded. The specimen now before us is about three inches long and a little over an inch wide; the surface of the iron is bright, but here and there there are streaky black patches, cavities filled with a black material. As the light falls upon one of these black areas one recognises numerous small but quite familiar faces. Passing the finger over their summits they stand up like some varieties of shagreen; but there they are—anyone who has ever seen rough diamonds would recognise them in a moment. Of course they are not cutable, although large enough to identify with the naked eye; nor are they gems of the first water, but what would more likely be classed as boart. They have a gray, wrinkled, somewhat mammallary surface, so often to be seen in diamonds, especially where crystalline faces are absent, and the rough surface is the result of strugglings between two or more forms of crystallization. But for all that there is that adamantine sheen from the rugosities of the surface, an ornamentation donned only by the king of gems. Turning to their physical properties, anyone can see a demonstration of their hardness by a visit to the British Museum, for upon showing them to Mr. Fletcher (the hero of a similar and perhaps greater discovery) he immediately tried one of them upon the piece of hard crystalline corundum, shown on the north side of the gallery as a specimen of hardness (number 9), and upon this it made a deep cut in an instant. We were extremely pleased to see it do this, as we felt it would be a proof positive, to all who cared to visit the Museum, of the indubitable hardness of the newly-discovered diamonds. And although they may not see the original, to see this proof of its capabilities may be convincing.

What is a Gem Mine?

We observe in an esteemed American contemporary the discovery of "a genuine opal mine," but upon reading the account it turns out that in the "gravel" which is used for road metal, eight opals have been found after a prolonged and diligent search; and the opal mine exists in the form of a prophecy of the discovery of a vein or ledge running through the gravel. Now when we see the "gravel" is sold at fifty cents a cubic yard, in all probability it is a true gravel, *i.e.*, a deposit of more or less water-worn stones, and sand, brought into its present position by a river. If such is the case, then the "genuine opal mine" in the form of "a vein of the precious gems" had better be sought for in the moon.

We have been asked if we can disestablish the claim of the Montana beds to be called mines, seeing by whom they are put forward, and if we are justified in likening them to the gravel deposits of the Thames. In reply to this we can say that we could even go further, and correlate the former even homotaxily with the latter, seeing they both contain tusks of the mammoth, and other mammalia characteristic of the period.

Notes About Town.

The State of Trade.

It is always difficult to produce a formula which shall correctly state all facts, as there are usually some varying elements that enter at some corner or other. We cannot, however, help thinking that the present state of trade is suffering from a quiet proportional to its subsistence upon Royal patronage. The stagnation of everything in the Court from the death of the Duke of Clarence was not over when it was again plunged into mourning by the death of the Duke of Hesse. We hear from those houses who have the pleasure of playing with these four-figure lines that trade is simply paralysed. It is very little better by those who depend upon the tip-top stratum, whose sympathy or custom prompts them to play follow-my-leader. Those houses who do business with the upper and upper-middle classes have less food for complaint, and one usually hears—"suppose we must not grumble."

* * *

The New Necklaces.

With the approach of Spring ladies, while retaining the high collar of the Virgin Queen, are opening the top of the neck again in furtherance of the same fashion, and in continuance of it have once more become patrons of the necklaces of this period. These are composed of innumerable festoons of small chains (such as we have been using for eye-glasses), looped up into various patterns, crossing and re-crossing. There are now quite a number of these selling; and various patterns are shown in this month's article on window dressing.

* * *

A New Field opens.

With the adoption of this fashion, which appears highly probable, a new field opens, in which some of the finest artistic productions will find scope, subject as they are to boundless variety, grace, beauty, and elegance. The connecting pillars will lend themselves to an infinity of treatment; there opens out an opportunity for some fine pieces of chasing, such as has not been presented for a long time. Enamels, too, and gems artistically arranged, will also find a place here. The clever color-enamel productions of Messrs. Eady, Paris, and Eady, for some unaccountable reason restricted to a certain number of the best houses, will doubtless serve as eye-openers to those suffering from *ennui.*

* * *

New Bracelets.

New bracelets *en suite* with the above are also appearing with elaborate clasps, and divided by one, two, and three pillars, all of which offer a wide scope for design and treatment. Although oval link chain, with links about a tenth of an inch long, is usually employed, other patterns would form a pleasing variety; they are always slightly graduated in length towards one side, so as to hang in small, graceful festoons.

* * *

New "Queen's" and other Alberts.

Ladies' alberts are also being produced in the new "Stuart" patterns, which lend themselves to quite as much, or even more, variety of treatment than the foregoing. This introduction of an unmistakable entirely new style is just what was required. It is quite possible it will produce a turning point, which, however, we think will be proportional to the energy displayed by the trade.

* * *

Aluminum Novelties.

Amongst the various novelties that have been brought out in aluminum perhaps none has had a more pleasing effect than the new damask patterns, which so eminently agree with the surface lustre and hue of this little-understood metal. There are now to be found some of the most pleasing ash-trays and such like things for a few shillings apiece that have ever been produced, and are selling well.

* * *

What the Silver Houses are doing.

A walk through the galleries of the large firms in the silver colony, such as Messrs. Walker and Hall on the Viaduct, Messrs. Silray, Hall, and Co., and several others in Ely Place, and all down Charterhouse Street, show that they are fully prepared for spring trade. Nor would those in "the Garden" like to be considered behind them in any way while a few hundred yards further east we have the immense factories of Messrs. Holland, Aldwinckle, and Slater, and Messrs. Barnard. In walking through these galleries, which we have been accustomed to perambulate "from our youth up," one cannot help being struck with the different lines upon which they have all developed, and, of course, the different class of goods in the same sterling metal; each has seemed to make a speciality. What an artistic and intellectual treat it is to be allowed to go through the cabinets of sketches of magnificent masterpieces, still retained in the possession of Messrs. Holland, Aldwinckle, and Slater; the countless castings, pictures, in metal of every action almost that has taken place under the sun, and above it, too, for the matter of that. With these artistic mosaics no emergency could arise for a trophy or presentation piece which could not be met in the shortest possible time at the minimum cost. At the present moment there are before us five letters from various parts of the country asking us to recommend firms to execute special orders, the lowest of which is £50. We take this opportunity of assuring the retail trade that we are always willing to give them the best advice in our power. We might also remark that we have several letters again this month from abroad, asking for the addresses of good silver novelty houses, which we should be pleased to forward to any manufacturer.

* * *

New Gilt Worcester.

In the galleries of Messrs. Horace Woodward and Co., Holborn Viaduct, can be seen, withwithout exception, what we consider some of the most beautiful productions in Worcester and *matt* gilt we remember seeing. The gilt of the china so matches with that of the mount that one hardly knows which is china and which is metal. But after all, it is the harmonious blendings of tone and hues that give them such a charm, in addition to the novelties and grace in shapes and uses. A new celery dish, so long wanted, has been brought out in this ware, together with several other novelties. The giltwork in patterns, which one would call "wrought iron," are very graceful and elegant. They have also on view some new pattern gilt bowls, some of the finest specimens of chasing one can often see, running from, say, ten to fifty ounces.

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A XIII. Century Piece.

On Friday, the 4th ult., at Messrs. Christie's, there was sold probably the oldest piece of plate ever brought into the market. It is a most beautiful chalice, silver-gilt, "of unquestionable genuineness," weighing 46 ozs. It, however, only brought 710 guineas.

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Still Greater Treasures.

After all, the most remarkable sale perhaps ever held is that of the Wertheimer collection, at which there was scarcely a single description of article of virtu that was not represented, the prices frequently running into a good sized fourth figure. The pictures, as might be supposed, brought the highest figures. But the articles in ornamental stones, such as lapis quartz, and malachite, were to our thinking amongst the most interesting. There was also some extremely interesting enamels. Some of the agate caskets and boxes brought good prices. So, also, did numerous fine old bronzes.

Some Historic Jewels. Recently a charming collection of articles of virtu have been dispersed, including some fine old historic gems. This was by order of the executors of a Miss K. S. Forbes, of Wimbledon, who claimed to be a lineal descendant of James II. Two pearl necklaces realised £5,000 and £4,600 respectively, a diamond necklet £1,700, and three drop-pearls £550. This, with the prices realised by other gems and a host of magnificent snuff-boxes, totalled up five figures for the first day, the sale extending over five days.

* * *

The Chicago Exhibition. Readers and all who have a spark of interest in the trade will be pleased to hear that our worthy defender of the rights of the British watch trade, Mr. Julien Tripplin, has been appointed to act on the committee of the horological department at the forthcoming Chicago Exhibition. The preparations which all over the world are being made to be fully represented, read more like an "Arabian Nights" tale, than a stern reality. Applications for space and information can now be made to Mr. Tripplin, 31, Holborn Viaduct, who will be pleased to furnish all particulars.

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Remarkable Prices for Old Silver. From March 1st to 3rd at Dowell's Rooms, George Street, Edinburgh, a three days' auction sale of old family silver and silver-gilt plate was conducted. The collection includes the larger portion of the service which belonged to the late Lord Justice-General Inglis, as well as the service from St. Martin's Abbey, Perthshire, and a service sent forward by the trustees of the Earl of Dunmore. There was a crowed attendance of buyers from London and all parts of the country, and the competition was very keen. Some of the prices realised were extraordinary, and on the first day one at least probably beat the Northern record. This was the figure of £13 per oz. given for an Early Italian double-headed silver cup and cover in the form of a chalice. The article weighed 7 oz. 10 dwts. The highest price hitherto recorded for silver plate being £10 per oz. The cup was the property of the late Lord Justice-General Inglis. Amongst other prices realised in the disposal of the late Lord Justice-General's collection were—£4 5s. per oz. for two chased taper stands with hexagonal bases and pillars, of date 1719; £6 15s. per oz. for two signet-handled fruit spoons, with gilt bowls, of date 1741; £9 per oz. for a dozen of agate-handled ice spoons, and £6 per oz. for an antique German bethrothal spoon, rat-tailed, of date 1697. These prices, however, were even exceeded on subsequent days, when as much as 18½ guineas per oz. was realised for two old "wager cups" weighing 21 ozs.

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Why we lose our Foreign Trade. Recent Consular reports from Italy and Japan have referred to the loss of trade owing to firms in England sending to those countries circulars and price lists based on the English weights and measures. The metric system is used in those countries, and our French, German, and other competitors use it in their quotations, but the English firms in question are content to puzzle buyers with weights and measures which are very troublesome and not understood. A similar complaint now reaches us from Egypt in a Consular report just issued, which points out that our weights and measures are "utterly unintelligible" to a large proportion of the persons to whom export houses in this country forward their circulars and price lists in Alexandria and Cairo. The metric system of weights and measures is in force in Egypt, and exporters of English goods to that country should adopt it in their quotations and transactions with countries where it is employed. Let us hope we shall soon have this commercial bugbear, this disgrace to civilization removed; so that even in our own little isle we can understand the quantity of any article for which we have to pay.

Birmingham Notes.

(By our own Correspondent.)*

It is with somewhat of regret that I take the pen in hand to write my usual notes this month, for, unfortunately, I have but little of an encouraging nature to chronicle. My hopeful anticipations of a month ago have not been quite so satisfactorily fulfilled as I should have liked. Still I cannot help but feel thankful that, considering the exceptional circumstances of the month, things have not been worse even than they have been. The extension of the time of Court mourning on account of the death of the Duke of Hesse has tended to prevent the favorable re-action I had hoped for, while the coal strike and its consequent effects on trade generally has crippled what little enterprise the Birmingham jewelers might otherwise have displayed. Here again, however, there is room for thankfulness, as had the strike been of longer duration the effects would have been nothing short of ruinous. The varied manufactures of Birmingham are so completely dependent on the coal supply, that one trembles to think what might have been had this supply been permanently reduced. I refer at length to this matter as it sufficiently explains why the jewelry trade has been unduly quiet, and in seeing the depths we have escaped, we are less likely to get despondent over what we have suffered.

As to April, we cannot reasonably expect much. The majority of our wholesale men are just finishing up their journeys, and nearly all the travellers will be home for the Easter Holidays. By the time these are over, the month will be too far gone to do much good, and we can only advise our friends and fellow-workers to rest on their oars for a while, and wait patiently for the merry month of May. Of course, there is the after-Easter buying on the part of the factors, to which the manuacturers may look forward, and doubtless several nice little parcels of goods will change hands. But the experience of the last few years is that there is not much reliance to be placed on this periodical buying, so I would warn our expectant makers not to expect too much.

The operative jewelers of this city take great interest in football matters, and the final match played in London on the 19th ult. was witnessed by many of them, who journeyed there by day trip to see the play. The unexpected defeat of their favorite and local team, the "Aston Villa," has formed the chief subject of conversation in our various workshops since the event. I might add that some of the "master men" also are affected with the same enthusiasm, and for a few days this topic eclipsed even the universal "bad trade" theme.

Yet another lecture by a local jeweler—again at the New Church Guild. On March 15th, Mr. F. Saxelby was lecturing on "Glimpses of Elizabethan London," illustrated with limelight views of the places described. Mr. Saxelby is an excellent Shakespearean scholar, and was thus enabled to throw a realistic light on the scenes and places in London during the time of Elizabeth.

By the death of Mr. Britton, late head of the firm of "B. H. Britton and Son," of Vyse Street, Birmingham, another link binding the trade of to-day with the past has been severed. This firm has held a prominent place in the trade here for many years.

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* We must not be understood as endorsing all, or necessarily any, of the opinions of our correspondent, who writes on his own responsibility.

AS usual in bad times the financially-weak members of the trade are being forced to the wall. Unfortunately, in their downfall the stronger ones suffer, more or less. During the last month there have been two stoppages largely affecting the Birmingham wholesale trade, one being a London firm of factors who have called their creditors together, and the other a Glasgow man, who has had to ask for an extension of time. In this latter case a promise of twenty shillings in the £ is made, and, judging from the balance sheet submitted, there is every likelihood of its being redeemed. I have not yet heard what the former people propose doing, although there is a rumor of ten shillings in the £.

I AM inclined to think that in many cases these sudden collapses which occur regularly with every recurring period of depression, are due to the arbitrary action of the various banks. It is too much a custom with them to give any amount of support to their clients when trade is busy and prospects good, but upon any indication of a spell of bad trade this support is suddenly withdrawn just when it is most needed. This of necessity precipitates that very crash, which presumably both supporter and supported are alike anxious to avoid. This conduct is extremely unfair, as the ready "needful" in times of prosperity induces the trader to branch out more widely than he intended, he depending, of course, on a continuance of the accommodation to meet his liabilities later on. When, however, he finds the supply stopped there is no possible help for him but to stop also, to his own ruin and his customers' loss. I have noticed this sort of thing occur repeatedly in my study of the varying aspects of our trade systems.

IN reference to the Annual Dinner of the Jewelers' Association held at the Great Western Hotel, on the 19th, I am sorry that my anticipation of last month has not been realised. In fact, I cannot congratulate the Birmingham Jewelers on a successful evening. The spread was not first rate, especially considering the high price of the tickets; while the speech of the evening by Mr. Chamberlain, which I looked forward to with great interest, did not contain a single allusion of special interest to the jewelry trade. A few straightforward sentences on the Bankruptcy Laws or the currency would have been worth more than all the bombastic references to the House of Lords. However, the opportunity is now gone, and we must wait another twelve months before it comes again. The other speeches of the evening were of but mediocre quality, and contained nothing to which I need call attention here.

THE exhibition of the work of the students of our Municipal School of Art has been held lately. There are some very good works shown—many of the designs being really good and effective. Also some of the metal work—brass and copper—indicates both ability of design and force of execution. There is but little touching the jewelry trade, however; a colored design for a mayoral chain being the only noteworthy thing.

OUR eminent medallist, Mr. Joseph Moore, whose renown is not merely local but world-wide, has lately passed his seventy-fifth birthday. He bears his age well, and is still hale and strong, and gives evidence of many years' work yet to be done. His eyesight is wonderfully good, and he can still do the finest work without glasses. To use his own expression, he "began to work before he had learned to play," and has been at it ever since.

A SOMEWHAT new development of trade for Birmingham is found in the watch-case manufacturing. A "Limited" in this line has just been started here. I see no reason why it should not do well, as this is a branch of manufacture eminently fitted to flourish in our district.

DIAMONDS are being offered here just now at much lower figures than lately. I do not quite know if this is the result of a general lowering of the market, or whether it is simply due to individual dealers being forced to realise; but I rather think that both these reasons are operating. At any rate, I know that several good parcels have recently changed hands at very low prices. There is always a rush upon Birmingham by the brokers when the London market is quiet.

IT is somewhat remarkable that the value of silver just now has reached a lower level than was touched even by the violent fluctuations of 1890. So far as my knowledge goes, three shillings and fivepence per ounce is the lowest quotation ever given for silver. The question that is agitating the minds of the Birmingham manufacturers is, whether it is worth while stocking a large quantity while the price is thus low, or whether this is likely to be a permanent reduction of value. Unfortunately I am quite unable to give a reliable answer to this query.

THE number of patent solitaires and sleeve-links is becoming extremely embarrassing to both the wholesale houses and the shopkeeper. Almost every day something new in these lines is appearing, and one would think that every conceivable idea for fastening has at last been used up. For the most part, however, these patents apply only to the commoner qualities of goods, and they do not sell to any extent in the better quality of gold work.

SOME little effort was made early in the year by the Technical School Committee to induce some of the younger adult workmen of the trade to take advantage of the instruction there given. I am sorry to say that this effort has met with but scant success, one or two only having availed themselves of the opportunity. Nor do I anticipate that much good will be done in this direction. The adult working jeweler as I know him thinks he is far too clever and well-informed to need any such instruction. He has learned his trade, and there is an end of the matter. Still, it may be well thus to note that the classes are open for adults, if they choose to go.

THE export trade has been rather busier during March, several large orders having been received here from the London shippers. A buyer for the Cape has also picked out a little stuff from the manufacturers' stocks. As the conditions of life in South Africa gradually right themselves, I anticipate it will form a splendid market for our local trade. During the "boom" at Johannesburg some years ago a vast amount of business was done there, although unfortunately some of the goods were never paid for. Still, it will be well to keep an eye upon the country in its development, so as to be ready at once with whatever it may require. Unless we do so other nations will take precedence in the matter of trade. "Our Letter from the Diamond Fields," which appears in our columns month by month, should be of great use to our friends in this direction.

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Burglary Insurance.—The committee of Lloyds have issued an important circular, from which we gather that in future they will only take the risk of goods in transit.

We regret the continuation of the excellent lecture of Mr. Tonks is unavoidably left over till next month.

Sheffield Notes.

(By our own Correspondent.)*

SHORTLY after writing the paragraph relating to Henry Wilkinson & Co. in last month's "Notes," the report was brought to me that the liquidators, Messrs. Barber, Bros., and Wortley, had succeeded in disposing of the business to Messrs. Walker and Hall, and that a cheque on account for £1,000 had been paid in respect to the transaction. Whatever there is of good remaining in the old concern will therefore be utilised to the fullest extent, for no one can accuse the firm of Walker and Hall of being deficient in business "push." Not the least valuable part of the purchase will be the large stock of dies included in it, the business of Henry Wilkinson and Co. having for many years been conducted on high art principles.

AS to the comparison between the state of the electro-plate trade now and two years ago, there is not much conflict of testimony. The verdict must be that it is not as good now as it was then. When, however, one begins to inquire more closely as to the volume of trade being done now, the testimony of no two manufacturers seems to agree. It is easy to see that this is not so much owing to any difference in respective cases, as from the variety of temperaments. Putting this and that together, one is forced to the conclusion that, notwithstanding the numerous complaints one hears, there is yet a fair amount of business doing. One thing pointing in this direction is the fact that among artisans in the silver and electro-plate trade, there are at present very few unemployed. This is a pleasing contrast to the state of affairs a little over three years ago.

A TRANSACTION of considerable interest and importance to the manufacturing and general community has just been completed by the amalgamation of the two rival telephone companies, whose competition has hitherto resulted in Sheffield possessing the cheapest telephonic service of any town in the country. As far as the National Company is concerned, the rates were admittedly unremunerative. The local company, which has always kept the lead, was able to command much higher rates. Some months ago overtures were made to the Sheffield Telephone Exchange and Electric Light Company, Limited, by a new company in course of formation in London, who also put themselves in communication with the Mutual Telephone Company in Manchester. The fact that negotiations were being carried on evidently leaked out, for the National Telephone Company, naturally alarmed at the prospect of this powerful combination, came forward with an offer which the directors of the Sheffield Telephone Exchange Company deemed it advisable to accept. Whether the new departure will be to the advantage of the general public is another question. In the peculiar circumstances of the Sheffield trades, and especially the electro-plade trade, the telephone has come to be an absolute necessity. As far as the large works are concerned the raising of the rates will not be a very serious matter, but with the small people, out-workers and the like, with whom they have to be in continual communication, the case is quite different. It remains to be seen whether the National Telephone Company will work their monopoly with that moderation which in their case will be the highest wisdom.

IN connection with the numerous rifle shooting contests of the West Riding the name of the Bingham Challenge Shield is continually cropping up. This fine trophy, as its name indicates, is the gift of Lieutenant-Colonel Bingham, the energetic head of the firm of Walker and Hall. It consists of a circular shield mounted on a frame covered with maroon velvet. There are three outer circles forming a wide border, leaving the body of the shield free for what may be called the primary illustration or chief design. The outer rim consists of a richly-chased laurel wreath in oxydised silver. The second, which is two inches in width, is ornamented with beautiful scroll work in silver-gilt on a dead silver ground, and also with the floral emblems of the United Kingdom. In this circle there are four modelled bolts by which the shield is fastened to its frame, enamelled in colors, and bearing the corporate arms of the four chief Yorkshire towns—York, Sheffield, Leeds, and Bradford. The third circle, which is perhaps the most beautiful, consists of a number of heraldic shields linked together by ornamental gilt studs. Each alternate shield is of dead silver finely enamelled in colors, with the arms of each of the regiments in Yorkshire, the circle containing the whole regimental arms. Between each of these enamelled shields is a plain shield ready to be inscribed as occasion requires, with the names of the regiments which prove successful in the competition. The centre of the Challenge Shield is occupied with a large and beautifully modelled lion's head in oxydised silver, around which is a circular scroll bearing the words "The Bingham Challenge Shield." The body of the shield consists of four oval-shaped pictures, illustrating the principal arms of the Service, the engraving of which is perhaps the least satisfactory part of the work. The shield is six feet ten inches in circumference, and has, as it lies at present in the window of the "Sheffield Daily Telegraph" office, a really fine appearance.

TROPHIES of ivory tusks are becoming quite a feature in Silversmith's showrooms. The three noble tusks which grace the staircase of Messrs. Rodgers and Son's premises in Norfolk Street constitute a fine illustration of this luxurious custom. The one which has been there longest is 9 feet long and 21 inches in girth, and was sufficiently attractive to excite the cupidity of the Shah of Persia on his visit to Sheffield. Next comes a recent arrival from the Congo, a very perfect tusk, 8 feet 8 inches in length; 21 inches in girth; weight 160 lbs.; and value £150. The hollow end of this tusk is only 2 feet 6 inches in depth, leaving a length of 6 feet 2 inches of absolutely solid ivory. Between the two is a West African, distinguished by its ebony-lined surface. It is the longest of all, standing 9 feet 3 inches; its girth is 20 inches; its weight 130 lbs.; and its value £120.

MR. JOHN GALLIMORE, of Matilda Street, who bought the business of the late Mr. J. A. Rhodes, tells me that the beautiful speciality of hollow-ware overlaid with saw-piercing is practically defunct. That the public taste runs that way may be regretted, but, of course, cannot be helped. It is, however, reviving in a modified form in America. No manufacturer who wishes to keep his doors open will ever attempt to run counter to popular tendencies. Mr. Gallimore, therefore, bowing to the inevitable, has turned his attention towards the production, in the very best style, of what the public really wants. The success which has attended his efforts is evidenced by the general air of prosperity which pervades the works, a cursory visit to which I recently had occasion to make. I hope in the near future to have the opportunity of going through them more in detail.

Coventry Houses are fairly busy—in fact, the large ones very so; some of the smaller ones are grumbling.

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Some New Gems.

MICROLITE.

AMONGST the various productions of the mineral world lately brought into this country by Professor Foote, there are several of special importance to those who take an interest in gems. Not that they are now made known for the first time to the scientific world, but they are new to the generality of the public. One of the most interesting gems is microlite which until recently has only been found in tiny crystals as implied by its name. But specimens of this gem of over half an inch in diameter are now before us. With this material in hand we are able to give further particulars of this beautiful addition to our gems. The color suite is from brown—and sage-green through yellows to full orange, almost red. It crystallises in the isometric system, and puts on probably a greater number of faces than any other gem. It is generally elongated along one axis. It often somewhat resembles some garnets, but is never so simple in its habits. The rhombic-dodecahedral faces are usually largely developed compared with the others present, which include cubicoctahedral and deltohedral, in addition to hemihedral faces. A lovely twin is now before us, which gives rise to a six-sided very low double pyramid finely striated from edge to edge, otherwise very much resembling some alexandrites for which it would doubtless be mistaken. It is, however, far brighter than the alexandrite, being almost adamantine. As it nestles in a group of crystals of the purest white mineral known—albite—it appears an unmistakable gem. When cut its beauties are ever far more obtrusive, its brightness and dispersion calling to mind the sphene. It is a great pity that it is so rare, and that nature only produces the gem in small quantities. But a glance at its chemical composition will show that it contains some of the rarest elements on our planet. So that it is only under very exceptional circumstances indeed that its genesis is possible, containing as it does, no less than six of the elements not found in any other gem. Of these columbium or tantalum (or both combined) form over 75 per cent., lime about 10-15 per cent., the rest being made up of uranium, wolfram, yttrium, tin manganese, lead, and iron, with a drop of water to wash the lot down.

BERYLLONITE.

This gem is also extremely interesting from its chemical composition, bridging over, so to speak, such gems as beryls, chrysoberyls, euclase and phenacites into which beryllium enters largely, on the one hand; and the turquoise on the other, where phosphorus plays the part of acid. In appearance, however, it is most like the phenacite being usually colorless, or, if one might use such a term, white colorless, just as we call Jager's diamonds blue-white, meaning a white or colorlessness, with an intention of having the blues should it be obliged to choose a color. It is true that occasionally one can see in beryllonite a suspicion of yellow, or rose. It also very much resembles white topaz in appearance, especially as it has one highly perfect cleavage, but other cleavages immediately appear which separate these two gems. There is a somewhat curious sheen on many specimens, to some faint extent recalling that upon albite. The fracture, although at times a little hackly, is usually very even and vitrious. The crystalline faces of those before us (some thirty in number) are all somewhat rough, dull and pitted, and apparently bear the impressions of the matrix in which they were formed. There is also another feature in which the gem resembles white topaz, and that is, that owing to its perfect cleavage blows frequently start an invisible crack, which from interference of light, produce the lovely colors of the rainbow or Newton's rings. We regret we have not seen an analysis of this gem, but we make it out to be composed of sodium 18·53, beryllium 7·37, phosphorus 24·33, oxygen 52·35.

SAPPHIRES AND RUBIES.

With all eyes directed upon America for unheard of supplies of the monarch of the gems, American corundums have an especial interest. Those, however, before us, although the result of years of collecting from the various and most important localities, would not excite an ordinary jeweler very much; indeed, they would be looked upon as colored spar. The rubies rise gradually from the adamantine-spar, from which they differ only in color and translucency. It is only in very small areas that they become at all red. The blue sapphires, on the other hand, are very much larger, occurring in crystals well-formed, of large dimensions, measurable by inches. Their name is justifiable by the assumption of the hue and the crystalline form, otherwise, commercially, they would not be considered gems. They usually occur in metamorphic rocks in which feldspar plays the most important part, accompanied by various micas. The ruby is accompanied by a beautiful green ripidolite. It is the destruction of rocks such as this that supplies the water-worn pebbles of rubies and sapphires that are found in the beds of various rivers, which either do or did flow over the area in which they existed, as in Montana and elsewhere.

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CHRYSOBERYL.

The public will now be able to see in our National Collection specimens not only of the matrix of the chrysoberyl, but a series of beautiful shapes and habits of crystallisation assumed by this gem. Its curious twinings are certainly most remarkable, as we pointed out when treating of this subject. It occurs associated with garnet, and a variety of zinc-magnesian spinel gahnite, in a rock which appears like a pegmatite, largely composed of feldspar, which has been altered by pressure, and which, although quite talcous in appearance, is nevertheless as rough as pumice. We should not, however, like to pronounce definitely upon the rock until we have made some microscopic sections of it. It can, however, be affirmed that the chrysoberyl can be looked upon in this instance as a rock-forming material, a claim never before advanced for it.

TURQUOISE.

As there are several new finds of this important and fashionable gem, anything about it becomes interesting. Several protracted visits to New Mexico have resulted in the collection of fine specimens of this gem. Usually the matrix is more or less decomposed and difficult to determine, under which conditions the turquoise is of a green color. But specimens now before us are bright and fresh, the matrix is a clean light bright gray, carrying specks of pyrites, and is in appearance very like many European trachytes. Throughout this matrix, lining cracks and fissures, and filling irregular cavities, the beautiful light blue gem permeates in every direction. In one place there has been a joint and a deposit of over an eighth of an inch thick, and on the specimen one of nearly three inches long has accumulated. But the most interesting point is that it is uniform or even mammallary, a form in which turquoise is very rarely seen, under which conditions it might readily be mistaken for calamine. It is also a little softer and far more brittle upon this part than in the interior of the matrix. So greatly does this differ in appearance from what one usually sees, that we should have doubted its claim to the name of turquoise had not Professor Foote assured us that he had had it analysed.

EVEN GEMS COME AND GO.

Impressed with some of the appearances of a decomposing stone-wall and "such like things that perish," we are apt to consider that the gems know no change; but we soon find, however, that, like "the eternal hills," "they come and go and nothing stands," or, if possible, even worse, they are essentially theosophists, or something infinitely older—at any rate, they are firm believers in re-incarnation—or one substance taking upon itself the body and outward form of another. Such productions are known as pseudomorphs. Before us is a remarkable example of what was once a beautiful tourmaline, probably of a lovely red inside and green out, as these colors are still retained, but there is nothing now left that can be called by that name. Its hardness is all gone; some half-a-dozen of its elements have been replaced with further additions of silica and alumina and water, with the result of producing a soft, spangling, sheeny mineral known as damourite. The specimen is from Maine.

The Montana Ruby and Sapphire Mines.

OUR respected contemporary *The Manufacturing Jeweler*, R. I., publishes the following letters from Montana, which will doubtless interest most of our readers.

THE NEW SAPPHIRE FIELDS.

No man these days who does not own a sapphire claim, or at least an interest in one or more of the new wealth producers, is considered at all in the swim in this section. For the time all other kinds of mining has to take a back seat, and if the craze to possess sapphire and diamond mines continues much longer, the mountain sides will soon be deserted, and the gulches and cañons will be filled with prospectors carrying pans and shovels. Almost every person in Butte now carries a few handfuls of precious stones in his pockets and knows where he can go and get wagon loads more. It is true that only a small proportion of the stones have any value, because those of marketable size devoid of flaws are extremely scarce, but this does not take away any of the charm attendant upon being the possessor of a few bushels of gems that "would be worth more than gold, if——." Every day men leave the city for some of the old worked-out placer gulches to locate claims, and each one fondly imagines that he will be lucky enough to stake ground that carries sapphires, rubies, and diamonds enough to make him as rich as Crœsus was before the panic. The sapphire fever is not confined in its ravages to the prospector alone, but, like the grippe, is no respecter of persons and classes, and affects all alike. The result is that merchants, mechanics, miners, professional men, and representatives of every other branch of business are interested.

The tales of future riches and wealth that some of them indulge in are amusing and even pitiable. The jewelers are the ones who so far have been the principal gainers, and are doing a rushing business in forwarding stones to lapidaries in the East to be cut and polished. Upon return of the stones the jewelers mount them, and that is where their profits come in. Quite a number of the cut stones have been mounted, and some of them are so pure and faultless as to equal the finest diamonds, and it requires the skill of an expert to detect the difference.

Al Johnson, who owns a placer claim near the Moulton reservoir, about five miles north-east of Walkerville, recently exhibited a handful of uncut sapphires that he found on his ground. He also had a number of cut stones which he said have been obtained from the same lot, and had been polished by Tiffany. The latter were unusually brilliant and sparkled like diamonds. He said he had sold a few at prices ranging from from 10 dols. to 25 dols. each, and had several more at a jewelry store, where they were being mounted. Mr. Johnson had been working his claim during the last five or six years, but until recently paid no attention to the hard, flinty, little pebbles which accumulated in his sluice boxes and often caused him to lose considerable dust, as the stones would settle in the riffles and allow the gold to be washed into the tail race. Since he has learned that the stones have a commercial value, he has decided to save them, and hereafter will look for stones as well as for gold. Besides the sapphires he has also frequently found large quantities of a peculiar black mineral broken up into pieces no larger than peas. Since learning that the little stones were valuable he also took some of the black stuff and gave it to an assayer, who pronounced it to be stream or placer tin, and will test some of it to ascertain its exact value. Several persons who have seen the stream tin found in the Black Hills say that the samples shown by Johnson are identical. Johnson says he has lots of the stuff, and if such is the case his claim will be doubly valuable. The sapphire group, a new diamond field, was located about four and a half miles south of Silver Bow, recently, by T. C. Flint, L. H. Convers, G. W. Chapman, John Fogerty, George F. Peery, M. M. Miller, R. C. True, and W. H. Palmer.

THE RUSH AT HELENA.

Helena, Mont., Feb. 17, 1892.

The rush to take up sapphire ground near Helena still continues. Every day location notices are received at the office of the County Clerk. Just what state the titles of these various claims are in is hard to tell. Some have been located probably two or three times. Not only is the ground on both sides of the river taken up, but locations are made of the river bed and channel, so that no spot may be overlooked in the region of country covering the wonderful sapphire fields, called by some the New Golconda of Montana. The river for miles up and down the sapphire fields will be a lively place this spring and summer, and will present a scene like that witnessed in the balmy days of the famous Alder Gulch, which poured a mighty stream of golden metal out into the world.

WHAT A HELENA MINER SAYS.

Seattle, Wash., Feb. 16, 1892.

F. W. Merrill, of Helena, who is interested in the sapphire fields of Montana, is stopping at the Northern Hotel. "These sapphires are found within twelve miles of Helena," said he, last night. "Some are picked up from the bars in the Missouri river, and others are taken by tunneling into the banks and washing the dirt, just as is done for placer mining. Both rubies and sapphires are found in the same fields. Of the sapphires, not ten in every hundred are fit for cutting. The rest have more or less flaws. The good sapphires, when cut, are worth about 10 dols. a carat, on the average, but I have not seen any Montana sapphires weighing more than three carats."

Mr. Merrill showed specimens of the cut sapphires—glittering blue-green gems, which are nearly as hard as diamonds. The rough stones are a dull blue-green, and translucent like bits of colored ground glass.

COMPANIES ARE FORMING.

Butte, Mont., Feb. 23, 1892.

Twenty more sapphire claims have been located, each 160 acres, representing 3,200 acres of placer ground, 17 of the locations being south of Silver Bow junction and three south-west of Rocker. As soon as the snow is off the ground the owners of the great diamond field will go to work to demonstrate something. Some alleged precious stones have already been picked up, and when people examine them they generally look wise and say, "that's the stuff."

ANOTHER SAPPHIRE SYNDICATE.

Butte, Mont., Feb. 24, 1892.

Twenty claims, containing 6,670 acres, is the property along Silver Bow Creek, which the Silver Bow precious stones syndicate owns, and as indicated by its name, the company intends to work the ground for the sapphires, rubies, and other precious stones it is supposed to contain. Articles of incorporation are now being prepared, and as soon as possible the syndicate will have a legal standing. A prospectus has been issued by the syndicate, describing the object of its existence and the formation and location of the ground it controls.

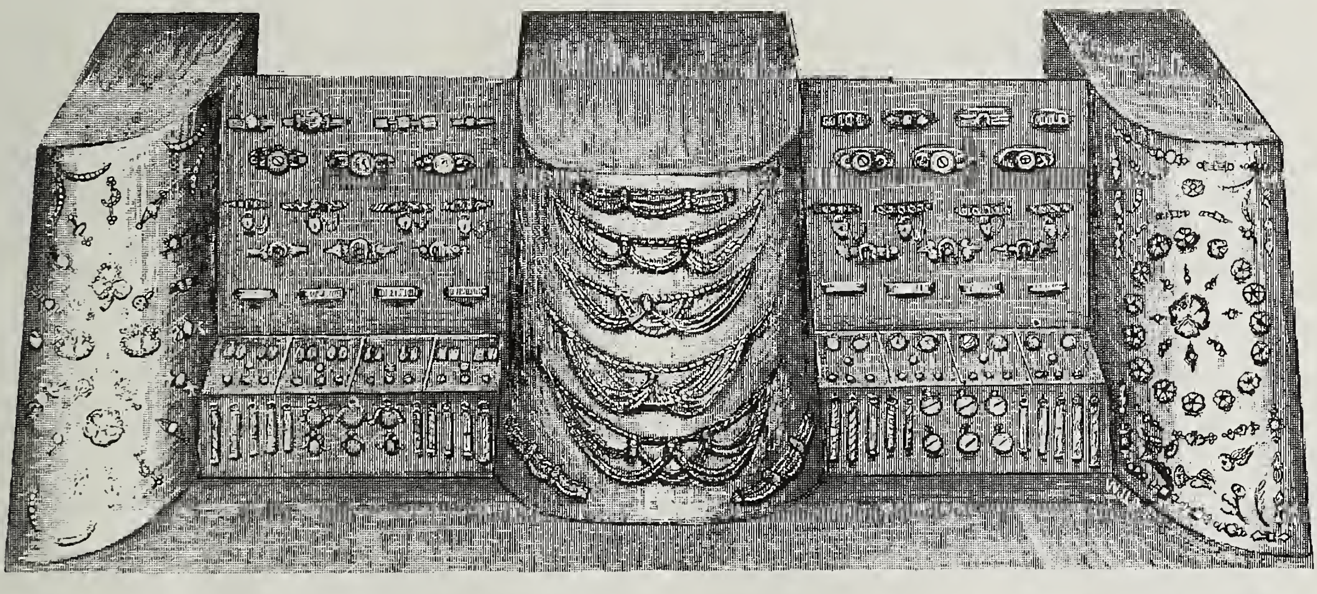
Windows and Window Dressing.

By the Editor.

(*Continued from page* 177.)

In the present chapter we purpose to dress the back of the window described on page 154 with all gold jewelry. Commencing with the centre block, which is the most prominent feature in the window, we allot it to the now fashionable fine festoon "Stuart" and similar necklaces. Where a member slightly tapers upwards like this block, it is best to put the heaviest necklace at the bottom, and graduate them upwards. The block then looks as if it were made for the necklaces. Slightly curved surfaces are much the best for these articles. They should always be separated by regularly diminishing intervals, and the main sweeps should always coincide. They should not be carried round in hard stiff straight lines, but in graceful curves. The spaces left at the top centre and the bottom sides can be employed by bracelets (now coming in) of the same character as the necklaces; or a couple of ladies' fashionable watch-chains can be introduced into the last-named position.

Turning next to the two ends, these should be stood flat sides together upon the counter, and dressed at the same time. The articles about to be displayed should be got together in a tray *first*, and then a design aimed at. It is not necessary that one should determine the position of every piece before he begins to stick one—quite the reverse—but both sides should follow each other; an equal number of important pieces should be employed in similar positions in each, and the same design or main features carried out as they are evolved. We may proceed, and by mere passing experiment produce a charming effect, providing we follow the hints already thrown out. First-class effect is produced and material economized by making a visible ellipse, rhomb, or circle, or otherwise breaking up the surface. These figures also give special facilities for rendering any novelty prominent; thus, the centre circle on the right-hand side makes the novel enamel flowers so conspicious that no one could pass without seeing them, or without noticing that they were very much to the front and very fashionable. The centre of this circle is also a very conspicuous place, and ought to be reserved for something good and effective. In this position we have placed a large enamel heart's-ease; radiating from it are small fichus, while above and below are related in outline. On the left-hand side we have adopted another style by way of variation, and as adding another design. Here the main features are a centre formed by four important brooches at intervals corresponding to the respective diameters of the block. This suggests an ellipse in which the brooches are then stuck, leaving out those most suitable for the corners thus left. Or the corners may be employed for something else altogether, showing up greatly by the contrast with the brooches, which occupy so marked a position—indeed, the brooches themselves are rendered more perspicuous if restricted to the central ellipse.



The tops of these three blocks are also very commanding positions, and admirably suited for a number of articles. The centre one can be used for a large cup, bowl, or trophy, and the two side ones for similar objects of smaller dimensions, handsome pieces of silver-gilt, sugar and creams, a card-tazza and a pair of graceful vases. An afternoon tea-set, toilet-set or mirrors, or some pieces of fine art china ware are all objects suitable for these positions.

We now come to the two flat-backed members. The front edge of the bottom step forms a first-class position for gold pencil-cases—a half-dozen at each side and the centre employed by, say, compasses in two rows, as shown in the above illustration. On the other corresponding position to the compasses seals may be employed. Upon the step an angular block at about 45° finds an appropriate place, fitted to carry four solitaire suites, and on the corresponding side link-suites find an equally good place. Each of the suites can be separated by a gold pencil slipped in between them. If the number required for this happens to be as many as it is desirable to show, the other space can be employed for ladies' alberts, festooned from hook to hook. The back of these members forms excellent places for bracelets. As we show in the illustration, the bottom row on one side is occupied by plain porte-bonheur, and the other of the corresponding side by square edge, the rest of the rows are occupied by more or less fancy patterns. And here perhaps a word may be profitable on the arrangement of these. Always classify the rows, do not put a thin one in a row of four, the other three of which are large, or *vice versa*. Put your largest ones in the three rows, and your smaller on the four rows. If the stock of bracelets varies very much in size, the distances between the rows must be graduated, otherwise interspaces will look very irregular.

We next come to the question of fixing the bracelets or holding them in position, and for this purpose there are numerous devices. A simple silk-covered fork with the edges slightly upturned, as in Fig. 8, is sometimes employed, but this is open to great objections in practice. Thousands of bracelets have been precipitated upon the floor from these perches, in journeys from the window to the counter. A very great improvement is suggested in Fig. 9, where the back is slightly gripped by a spring from which the bracelet can easily be released by the pressure of the thumb-nail. Another favorite plan is to fix them with three pins as in Fig. 10, but this is open to great objections as the cut pins invariably scratch the bracelet. Some firms always keep the back of the bracelet wrapped in white tissue, but unless this is kept perfectly clean and fresh it is very objectionable. In placing the bracelet upon the pins the back is laid upon the lower two pins, and when in position the front allowed to turn over forwards and the bracelet falls into position, in which it is just slightly nipped by the three pins. Another plan is to replace the pins by silk-covered pegs firmly fixed, and employ a small silk-covered wedge to hold the bracelets in position.

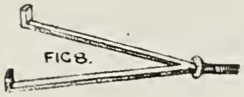


FIG 8.

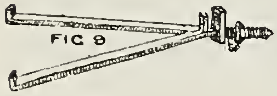


FIG 9

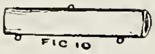


FIG 10

In all these methods the backs remain interchangeable, and can be dressed in one style this week and another the next. All sorts of blocks could of course be made to rest upon the back step, and the bracelets could be made to drop in, or the backs themselves could be divided off into divisions for various things, including rings. The step could be broken into, say an inch-and-a-half at the first one, forming a ledge along which could be placed small nicknacks, or ear-studs upon blocks, or anything of similar dimensions. Two six-inch trays could follow carrying studs and links, separated by a pilaster with rounded front, which could be made to take studs, capped by a cup of scarf-pins. Another step of about an inch-and-a-half could follow, similar to the one below, and the back space then be occupied by two ring trays. Thus broken up, the window looks very interesting and attractive.

(*To be continued.*)

Our Letter from the Diamond Fields.

(By Vaalite.)

Kimberley, Feb. 25.

ONE important change has taken place here since my last, which may be of interest to your clock-making readers, and that is, we now know the time. Up to February 8th, time here in Kimberley was about half an hour out with the Cape, but it has been decided that all stations on the Cape Government Railway shall be considered to be 22½° E. of Greenwich in point of time. This will necessitate a putting back in some instances, and forward in others; but we have what I suppose they call a scientific time, although, so far as I am concerned, I don't care much whether the sun rises eight minutes earlier now than it used to according to the almanac or not. Still, the new arrangement will obviate a great deal of nuisance and unnecessary annoyance. The next thing to knowing what time the sun goes down, is knowing how to keep warm when he has departed. Now, the question of fuel has always been a very serious one out here and threatened to handicap progress considerably, as coke is £14 per ton, and all coal had to be brought for many hundreds of miles. But the revelations of the Premier mine have impressed all thoughtful men that nothing but a thorough and systematic prospecting the entire country could supply an answer as to whether or not we are surrounded by immense diamond or other mines. In past years a mere tickling, or at most a surface-scratching, if not remunerative at once was concluded to be sufficient evidence of the non-existence of diamond mines. I wonder how many people have scratched over the Premier without discovering its real nature? Now, however, things are different, and while prospecting for diamonds just outside Beaconsfield they have come upon a good workable seam of coal, which will revolutionise things almost. Another important revolutionising element that will shortly be an accomplished fact is that we are going to have a School of Mines, that is—if all goes well. One party is in favor of its being at the Cape, but there is now prospects of its being here. The exhibition is progressing very favorably, and I hope some of your manufacturers will see their way clear to exhibit. Of this they can be sure: that South Africa is an open market for all that is required in this part of the globe. Our commonwealth is increasing; our output of gold is nearly doubling every year; we shall soon be the chief supply of the world; and our diamond industry, under any circumstances, is good for a hundred years with only what is in sight. Every year our mineral wealth will increase. We are not separated from our mother country by prohibitive tariffs, and we are not a set of sharpers wanting to copy her ideas and patterns. We want a closer relation between us and the mother country. We want you to exhibit, so that we can see what you have to sell and where we can buy it; and I venture to think it will do you infinitely more good to exhibit under these conditions than to send your goods to a World's Fair, where everyone will be sight-seeing, and there merely for pleasure, and where the best of motives will not probably transcend idle curiosity.

Turning to the diamond trade, several events have recently transpired of a very important character. The strangest of all is that after settling with Mr. Ward in the manner I described to you in my last, and agreeing for him to work the mine with a limited output of 20,000 carats, they have made a fresh agreement with him whereby Ward is to be pensioned off, and retire home to America and enjoy the fruits of his toil. The De Beers thus become sole possessors of the mine at once, and can either work it or shut it down; but of this we may be certain—that they will maintain the monopoly as long as they can. It is said that the working displayed a condition prejudicial to the maintenance of the monopoly, but I should not like to answer for this. Nor, indeed, does it matter; things are now practically, as they were before the find. And what is worse, the field for labor which the development of the Wesselton would have opened up is now a vanquished hope. There is another important case in which the De Beers have come out triumphantly, even against the Government. It is the case to which I have referred before in connection with the *debris* round about the mines. You are aware that in former times the old diggers shot their badly sorted *débris* in heaps on waste land belonging to the Government. As soon as the washing of this revealed the fact that the material was worth the operation, De Beers asserted that it was theirs, and became so upon the purchase of the mines. The Government, on the other hand, said, "No, it was shot upon our land by the former owners, who left it there and deserted it; and therefore it is ours." In all probability they intended either to wash it themselves, and so find work for the unemployed, or let it out for washing. But, would you believe it, the court ruled for the Premier; and a pretty warm time is in store for him, and although people have hardly recovered from the knock-down blow of the verdict, great indignation is being expressed. Already the *Advertiser* has used some of the most unparliamentary language against the Premier, placing him on the horns of a dilemma between his Satanic Majesty and the deep sea. Time only will show what course he will adopt, and what will follow. Another frightful piece of business is that connected with Du Toits pan. You are aware that they are the largest holders in this mine, and have shut down their workings so that all the water runs out of their claims, and floods that of the Gordon on the north and of the British United on the south. And this, too, notwithstanding the fact that these companies are largely capitalised and worked by men who have been the best of friends to those at the head of the De Beers.

For some reason or other, De Beers have been selling off their stuff pretty close, mostly in immense lots; one, of which Messrs. Bonato were the purchasers, amounted, it is said, to seven figures. Probably it was to supply the ready cash for the Premier, although they have no need of it, seeing their reserve reaches seven figures.

In April and the first few days in March, the N. E. Bultfontein turned out twelve hundred carats. In January Jägersfontein found 11,903¾ carats, valued at £28,000, which is the highest average since February, 1890, and the highest but one in amount—the latter occurred in December 1889, when it was £38,000. Of course, the average price does not indicate the market value so much as the quality of the stones found, although these stones do not vary much, and are always very much higher in value than the De Beers diamonds, the highest price yet published for the latter being 29s. 6d.

Watch and Clock Making.

(*Continued from page* 177.)

Answers and Notes to Questions set at the City and Guilds of London Institute Examinations.

By I. Herrmann,

Director of the Polytechnic School of Watch and Clock Making.

(III.)—Honors Paper, 1880.

We gather from what has been observed on page 177 that when a given mass is in motion, the only condition that can vary is its velocity, but the product of mass and velocity is its momentum, which again is equal to the sum of force increments that have acted on the mass, hence this force must always vary as the velocity, and therefore

$$\frac{W}{g} = \frac{\text{pressure}}{g} = \frac{\text{force}}{\text{velocity}} = \frac{\text{momentum}}{\text{velocity}}$$

$$= \text{mass} = (\text{a constant quantity})$$

So that finally, since at the end of one second g denotes the velocity, W the momentum generated, and M the quantity of matter, while W varies as g, it follows that

$$M = \frac{W}{g} = \text{constant.}$$

To connect this with the principle of "vis viva" or kinetic energy, which is sometimes written

$$= \frac{W\,v^2}{2g}$$

Here W signifies the same as M in pounds. M in pounds must always be taken within limitation, that is at a particular degree of latitude, where of course mass and weight are identical, in which case

Wv means the same as Mv.

An adequate conception of the full importance of the principle can of course only be realised by experience, and experience can only be acquired by exercise (except where communication is of a physical character), hence the reason for the assertions by Todhunter.

Continuation of Note upon Page 139.

By reason of the above explanation of the moment of inertia and radius of gyration, I may now show how the expression [(e) page 6] is obtained.

Let a heavy rod be suspended from a horizontal axis at one end, round which it can move freely, and let s denote the position of the axis, and g that of the centre of gravity of the rod, and let h denote the distance of g from s. Let M denote the mass of the rod, K its radius of gyration, and θ the angle of inclination of the rod, with the vertical as it starts from rest. When the rod has oscillated to the vertical, the work done on the rod by gravity is

$$M\ g\ h.\ \text{ver. sin. } \theta,$$

and this is its kinetic energy as given in (e) page 256; hence

$$\tfrac{1}{2}\ M\ K^2\ \omega^2 = M\ g\ h \text{ ver. sin. } \theta \quad . \quad . \quad . \quad . \quad . \quad (u)$$

whence $$\omega^2 = \frac{2\ M\ g\ h}{M\ K^2} \text{ ver. sin. } \theta = \frac{2\ g\ h}{K^2} \text{ ver. sin. } \theta \ . \ . \ . \ . \ (\nu)$$

Let L be the length of a simple pendulum, descending through an angle θ, and ω its angular velocity at the lowest point; then by (ν)

$$\omega,^2\ L^2 = 2\ g\ L \text{ ver. sin. } \theta, \text{ hence } \omega,^2 = \frac{2\ g\ L}{L^2} \text{ ver. sin. } \theta$$

$$= \frac{2\ g}{L} \text{ ver. sin. } \theta \quad . \quad . \quad . \quad . \quad . \quad (t),$$

hence by (t) and (ν) if $\omega = \omega,$

$$\frac{2\,g\,h}{K^2} = \frac{2\ g}{L}, \text{ or } L\ h = K^2,$$

hence $$L = \frac{K^2}{h} \quad . \quad . \quad . \quad . \quad . \quad (\xi),$$

that is in any compound pendulum, the length of the equivalent simple pendulum is equal to the quotient of the square of the radius of gyration divided by the distance of the centre of gravity below the centre of suspension. I will show further on how to apply this practically in the construction of a compensation pendulum. In connection with this I may prove the interchangeability of the centres of suspension and oscillation, referred to on page 256 (volume xvi.), and in equation (*ii*).

It is a principle of the moment of inertia of a body, that if it is caused to rotate round an axis through its centre of gravity, and then alternate round a parallel axis through any other point, the moment of inertia round the last axis is equal to the moment of inertia round the axis through the centre of gravity, plus the product of the mass of the body into the square of the distance between the two axes.

Let K denote the radius of gyration round the axis through the centre of gravity, and K, that round the parallel axis and h the distance of the two axes; hence

$$M\ K,^2 = M\ K^2 + h^2\ M, \text{ or } K,^2 = K^2 + h^2$$

whence by (ξ)

$$L = \frac{K^2 + h^2}{h} = \frac{K^2}{h} + \frac{h^2}{h} = h + \frac{K^2}{h}$$

and therefore

$$L - h = \frac{K^2}{h} \text{ or } (L - h)\ h = K^2 \ . \ . \ . \ . \ (\xi\ a),$$

but the left hand member of the last equation is the product of the distance between the centre of suspension and the centre of gravity, and of the distance of the centre of gravity and centre of oscillation, which must always be a constant quantity; hence the centre of oscillation and centre of suspension are reciprocal or interchangeable.

By recent returns as to the number of marks gained by a watch with a tourbillon train, these deductions appear to be contradicted by inferences that may be drawn from that result, The inertia of matter both at rest and in motion is too well established to be upset by any inference. Those who may be troubled with doubt can satisfy themselves by two simple observations.

If they have any opportunity of listening to a tourbillon train they will notice the bang at every drop of the escaped wheel, which expresses the energy stored up in the tourbillon frame; and that energy requires a proportional spring power, and means destruction to the parts by which it is destroyed. We must remember that these trials always are made under the most favorable conditions, and ought to be considered in connection with the behaviour of a timepiece afterwards. Besides, there is a condition under which the balance moves most favorable to good performance; that is, it passes through all positions in relation to external influences periodically, which are thereby neutralised. Considering, moreover, that the unfavorable effect on the balance during the early running of the timepiece is small, while the rotation of the centres of the balance about a separate axis disposes of several

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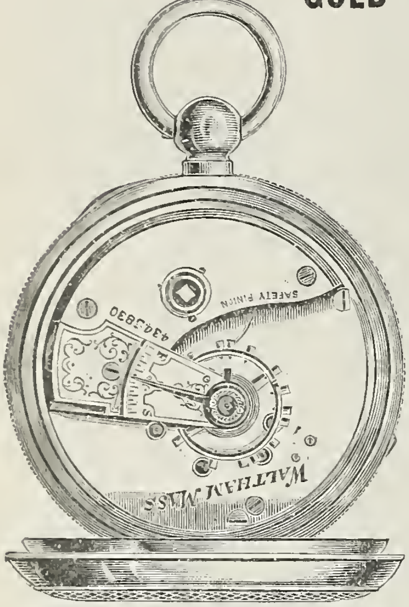

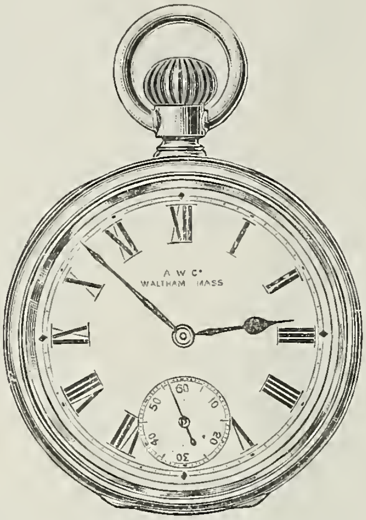

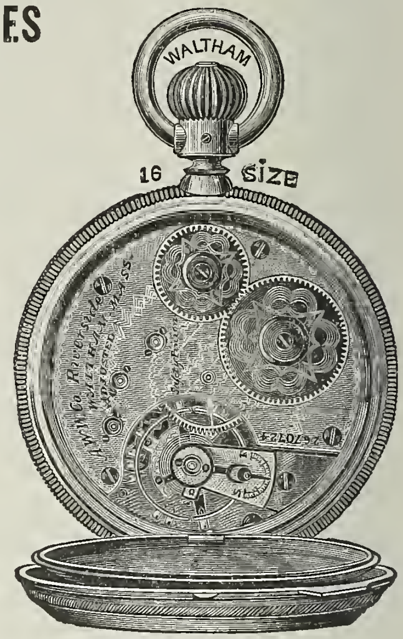

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Gold 10 carat Open Face *from*	4 13 0	—	—
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Gold 10 carat Open Face, Keyless, *from*	—	5 8 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	6 10 0
Gold 18 carat Open Face, *from*	8 2 0	—	—
Gold 18 carat Hunters, *from*	—	—	10 8 0
Gold 18 carat Keyless, Open Face, *from*	—	9 17 0	—
Gold 18 carat Keyless Hunters, *from*	—	—	12 0 0

Ladies' Watches.	Key-winding	Keyless	Hunter
Silver Open Face, *from*	£1 18 9	—	—
Silver Hunters, *from*	—	—	2 1 6
Gold 10 carat Open Face, *from*	3 8 0	—	—
Gold 10 carat Hunters, *from*	—	—	4 6 0
Gold 10 carat Open Face, Keyless, *from*	—	4 2 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	5 0 0
Gold 18 carat Open Face, *from*	5 19 0	—	—
Gold 18 carat Hunters, *from*	—	—	7 2 0
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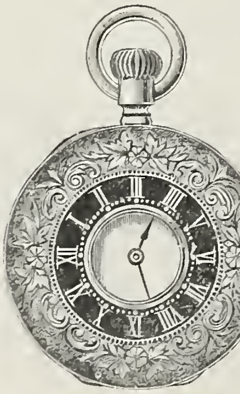

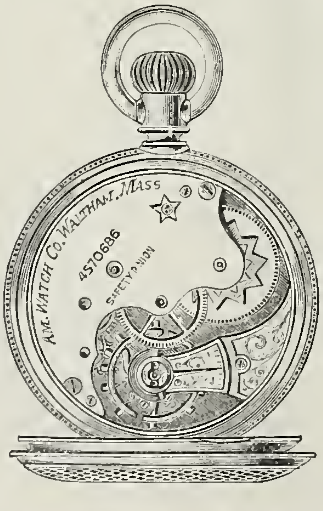

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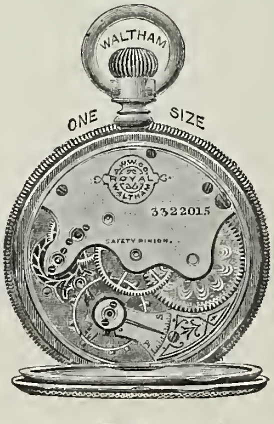

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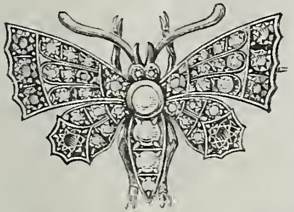

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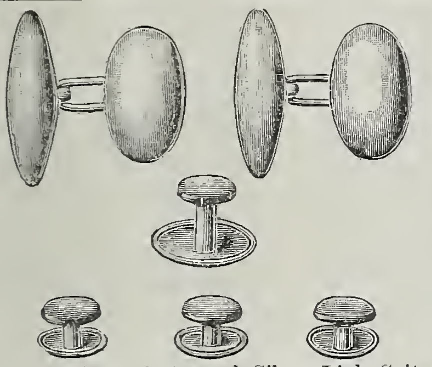

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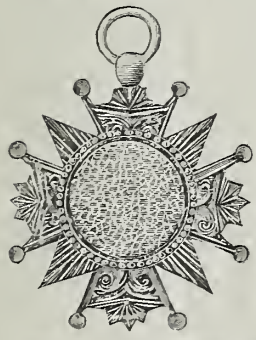

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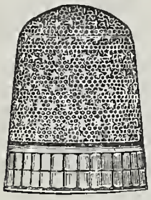

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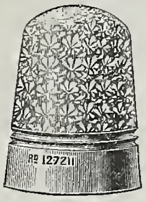

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Keepers—9-Carat—The finest stock of 9-ct. Keepers in the Trade.

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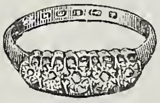
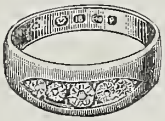
LADIES' RINGS of the most choice description. I have one of the largest and best selections of Ladies' Gem Rings and Engagement Rings in the trade. Over 5,000 to choose from.

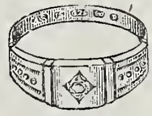


Ladies' Half-Hoop Gem Rings—All Diamond, 30/- to £50; Diamond and Ruby, 25/- to £50

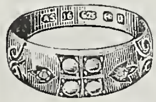


Ladies' Boat Set. Diamond Rings at all prices.

Ladies' Diamond and Gem Set Rings of every other description, 15/- to £25.



Ladies' 15-ct. Engagement Rings, same as drawing, and other pretty designs; sell very well. Real Diamond. 12/6 each.



Ladies' 15-ct. Ruby and Pearl Gem Rings, like drawing, and various other most saleable patterns. 12/6 each.

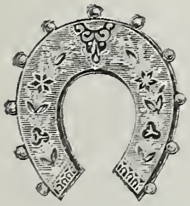
Gentlemen's Diamond Rings

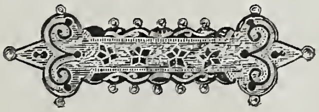
at all prices.

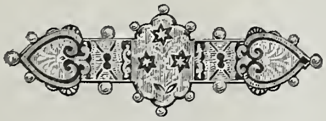
Gentlemen's 18-ct., 15-ct., and 9-ct. Signet Rings in great variety.

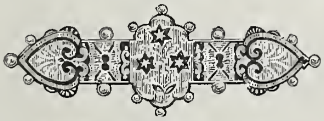
Special attention given to orders for **MASONIC JEWELS, SPECIAL PIECES, PRESENTATION KEYS, PRESENTATION JEWELLERY,** and **OFFICIAL JEWELS** of all kinds.

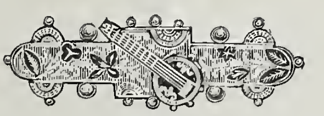
NEWEST DESIGNS OF 9-CT. HALL-MARKED BROOCHES.

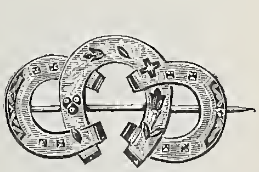












Special Line of 9-ct. Hall-Marked Brooches, various patterns, as drawings, and other pretty designs, all at 5/9 each.

These Brooches with Earrings to match, 8/9 per set.

SIMILAR BROOCHES, but larger size, **9-ct. Hall-Marked**	... ...	8/3 each.
,, ,, ,, with Earrings to match	... ...	11/3 per set.

A large variety of all the most fashionable and best value patterns in 9-ct. Gold Brooches always in stock.

A. SYDENHAM

gives special attention to all Colonial Letters, and will be pleased to receive Orders, if accompanied with Cash or satisfactory English References.

26, Frederick Street,
BIRMINGHAM,
ENGLAND.

ILLUSTRATED PRICE LISTS ON APPLICATION

influences to error, there is no need to run to the opposite conclusion that inertia is a neglectable item.

The reader who has not got the opportunity of listening to a tourbillon may find a very good substitute in an ordinary dial. Everyone will have noticed that the sound of the tick is different on one pallet to what it is on the other. The simple reason is, the rate of motion decreases on the engaging pallet and increases on the disengaging; thus in the latter the escapement has more energy when it drops on the engaging pallet, and hence the difference of sound. The effect of this is often seen in the greater wear of that pallet, which may be a criterion as to what time will effect on a tourbillon.

(To be continued.)

The Dinner of the Staff of Mr. J. W. Benson.

THERE are few of us who have not felt an admiration for Old Fezziwig on that memorable Christmas Eve when such an enjoyable time was provided for employés, and we feel that to only have been there we would not even have objected to have been the boy from over the way, smuggling ourselves in behind anyone. But as we did not enjoy that privilege, we find a counter solace in unfavorably contrasting the present with the past, notwithstanding its extreme unjustifiability. As the year rolls round we notice re-unions of employés scattered through the various branches of some of the large firms, on which occasions a wine bill is manufactured to an amount that Fezziwig would have considered sufficient to pay his best man years of salary. Such a gathering as this is the one which took place on March 5th, at the Freemasons' Tavern, from the united houses of the firm of Mr. J. W. Benson, when the principal and senior assistants to the number of about 40 sat down to the annual dinner. Mr. Gould (manager of Ludgate Hill Branch) was in the chair; and Mr. Bulley (Old Bond Street), vice-chairman. It speaks something for a firm of this dimension to be able to say that during the six years these annual gatherings have been made, one could count upon the fingers of one hand all of the original roll that have left the firm (except those claimed by the monster that awaits us all). After the usual toasts and the musical honors paid to that of the firm, a selection of well-executed vocal and instrumental music, helped down by a bountiful supply of wines and cigars of the finest brands, was indulged in and thoroughly enjoyed.

Messrs. S. Smith & Sons' Annual Dinner and Smoking Concert.

NEXT to a dinner comes a smoking concert, when it becomes possible to add to a gathering representatives of "the trade." Actuated probably by this idea, Messrs. S. Smith and Sons have for some years in succession given a "Smoker," the last one being celebrated on the 10th ult, at the Freemasons' Tavern, with Samuel Smith, Esq. in the chair, at which 450 of the Trade attended. There was a programme of music of every kind and description, sketches, solos and songs, between which it would be difficult to choose. Perhaps "The Whistling Coon" brought the floor into more trouble than anything else, but yielded in enthusiasm to that displayed at the toast of "the Firm." Mr. Jeffreys replied on behalf of the employés. Mr. Salter proposed "the chairman," which was also very enthusiastically received. In response, the chairman expressed his great pleasure at meeting so many of "the Trade" on the occasion. Mr. Smith evidently does not believe in "keeping the trade at a distance."

Not resting with the success of the concert, the firm gave the annual dinner to the employés on the 19th ult., at the same old tavern, where "the good things of time and sense" were liberally indulged in. And even yet the cry is "still they come," for next year a new feature is to be added by way of a "Ladies' night."

Goldsmiths' and Jewelers' Annuity and Asylum Institution.

AMONGST the matter unavoidably left over from our last number was the account of the annual dinner of the committee, and half-yearly meeting of the above laudable institution. The only thing against which we have anything to say is that no effort is ever made to bring it, or its actions, before the trade. Elsewhere we publish a letter from a country subscriber, asking for information respecting the trade charities, and we are prepared from experience to say that our country friends are no less enlightened than the majority of their town brethren. We have constantly called attention to this fact, to those whose duty it is to publish these reports, or to endeavour to get them published, and we hope after this public notification we shall see a better line adopted in the future, or we shall in the interests of those charities try something else. When we consider how large a portion of the capital of almost every prosperous and flourishing concern to-day has been expended upon advertising, it becomes evident where the secret of success lies, and what advertisement could be so telling as the chronicling of the good work being done by these associations? Yet no trouble is taken to notify these meetings, or what transpires at them. We are extremely sorry to have to use this strong language, and should not do so if we had not been at this question before. Notwithstanding this little shortcoming, we are pleased to say that the number of subscribers for 1891 increased from 1476 to 1620, but we should like to see it infinitely more than this, especially as of the 144 increase Mr. Hooper introduced 72. £1,231 12s. 4d. was paid to annuitants, £61 18s. to inmates of the Asylum, £29 for coals, and £3 a death claim. £400 was invested in Consols, and £441 10s. 6d. was left in hand. The reserve fund now stands at £10,287 9s. 7d. Some amendments of laws were proposed, but lost. The result of the polling was as follows:—Males: Bolton, 2,988; Kempson, 3,008; Yandall, 1,773; Cockram, 1,650; the two first being elected. Females: Woelfell, 1,933; Freeman, 1,788; Lowe, 376; Tapley, 700; Smith, 791; Franc, 65; Bocock, 1,101; the two first being elected. A vote of thanks to the chairman for presiding closed the proceedings.

A Fine Silver Trophy.—This present month of March has come in like a lion or Polar bear, for since its commencement the frost has been the keenest and the snow the deepest of any we have encountered during the past winter. We have been lately experiencing an eager and nipping air, but the thaw now setting in gives us a forethought of summer and genial sunny days. The mention of athletic sports will call up such pleasing anticipations, and that being so is it any wonder the prizes offered by the Crossland Moor Athletic Club, and which are now amongst other trophies being exhibited by Messrs. Fattorini and Son, in their Kirkgate windows, should attract by-passers to such an extent as to make them crowd round to view the lavish display? In point of beauty, novelty, and value these far eclipse any previous "awards of merit" offered by the promoters of the Crossland Moor Athletic Festival. They amount in value to £70, and embrace several distinct innovations on the usual order of prize-list valuables, which fact alone will doubtless induce competitors of the highest standing to enter. There are those amongst them quite shrewd enough to prefer things which are of sterling value and utility to the more meretricious and showy gewgaws so often offered for competition on occasions of this kind. The collection of prizes are well worth looking at, and reflects credit alike on those entrusted with the choosing and those who provide the many beautiful articles comprised in the show.

The Kew Report.

Kew Observatory.—Performance of the 29 Watches which obtained the highest number of marks during the 14 months to December 31st, 1891.

Watch deposited by	Number of Watch.	Balance spring, escapement, &c.	Mean daily rate. + Gaining. — Losing.	± Mean variation of daily rate.	Mean change of rate for 1° F.	Difference of mean daily rate.				Difference between extreme gaining and losing rates.	Marks awarded for			Total Marks. 0—100.
						Between pendant up and dial up.	Between pendant up and pendant right.	Between pendant up and pendant left.	Between dial up and dial down.		Daily variation of rate.	Change of rate with change of position.	Temperature compensation.	
			secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.				
Stauffer, Son & Co., London	136862	Single overcoil, g.b., tourbillon chronometer	+0·2	0·3	0·03	—0·3	+0·2	+0·3	+0·4	3·0	34·4	39·3	17·9	91·6
Baume & Co., London ..	103011	Single overcoil, g.b., tourbillon chronometer	—1·2	0·25	0·04	—0·8	0·0	+0·2	—3·0	5·2	35·1	35·2	17·2	87·5
A. E. Fridlander, Coventry	52720	Single overcoil, d.r., g.b., lever	—0·8	0·4	0·04	—0·5	+0·7	—1·0	+3·7	6·2	32·4	35·4	17·6	85·4
A. E. Fridlander, Coventry	52730	Single overcoil, s.r., g.b. ..	+3·8	0·4	0·04	+2·2	+2·6	+4·0	+2·5	7·2	32·3	34·6	17·7	84·6
E. F. Ashley, London ..	04107	Single overcoil, s.r., fusee ..	—0·3	0·4	0·06	+1·9	+2·5	+1·0	—0·1	5·2	31·8	36·9	15·7	84·4
E. F. Ashley, London ..	04047	Single overcoil, s.r., fusee ..	+0·3	0·5	0·07	+1·0	+0·9	+0·2	+0·4	5·5	30·5	38·1	15·2	83·8
Usher & Cole, London ..	24390	Single overcoil, s.r., g.b. ..	+1·4	0·5	0·05	—0·6	+0·7	+2·6	—0·1	7·0	30·6	36·0	16·9	83·5
A. E. Fridlander, Coventry	52339	Single overcoil, d.r., g.b. ..	—0·6	0·5	0·03	+0·1	—2·7	—4·2	—1·5	6·2	30·7	34·2	18·3	83·2
T. R. Russell, Liverpool ..	86600	Single overcoil, s.r., g.b. ..	+1·1	0·7	0·01	+1·4	—0·4	+0·6	—0·6	5·2	25·8	37·8	19·4	83·0
W. Holland, Rock Ferry ..	3690	Single overcoil, s.r., g.b. ..	+3·4	0·5	0·03	+1·2	+2·1	+4·2	+1·3	6·8	29·1	35·5	18·2	82·8
Jos. White & Son, Coventry	32142	Single overcoil, d.r., g.b. ..	—0·9	0·5	0·08	+1·9	+1·3	+1·4	—1·6	5·3	30·1	37·4	15·0	82·5
Jos. White & Son, Coventry	31926	Single overcoil, d.r., fusee ..	+3·8	0·4	0·09	—0·1	—1·8	+2·3	+0·2	7·5	31·2	36·5	14·3	82·0
Rotherham & Sons, Coventry	86529	Single overcoil, s.r., g.b. ..	+1·9	0·5	0·04	+2·8	+2·8	+1·4	+0·8	8·5	29·0	35·4	17·5	81·9
A. E. Fridlander, Coventry	13113	Single overcoil, s.r., g.b. ..	—2·7	0·5	0·06	+0·8	—1·7	+2·0	+1·6	6·3	30·5	35·0	16·0	81·5
Jos. White & Son, Coventry	32256	Single overcoil, d.r., g.b. ..	+0·1	0·4	0·06	+0·3	—3·1	—2·8	—0·4	5·0	31·2	34·3	16·0	81·5
J. Newsome & Co., Coventry	108491	Single overcoil, s.r., g.b. ..	—3·5	0·6	0·03	—2·0	—0·6	+0·7	+0·1	7·0	27·5	36·1	17·7	81·3
Rotherham & Sons, Coventry	88064	Single overcoil, s.r., g.b. ..	—0·6	0·6	0·05	—1·0	+0·3	—1·6	+1·4	6·0	27·2	37·0	17·0	81·2
A. E. Fridlander, Coventry	52704	Single overcoil, d.r., g.b. ..	—2·8	0·6	0·02	—2·6	+0·6	—2·4	+4·7	7·3	28·8	33·5	18·8	81·1
E. F. Ashley, London ..	03968	Single overcoil, (palladium), s.r., g.b.	—0·2	0·5	0·11	—0·8	—2·1	—0·9	+0·5	7·2	30·6	37·9	12·5	81·0
Rotherham & Sons, Coventry	86764	Single overcoil, s.r., g.b. ..	+1·9	0·6	0·05	+0·1	+3·1	—0·7	—0·6	7·2	28·7	35·6	16·7	81·0
A. E. Fridlander, Coventry	52706	Single overcoil, (palladium), d.r., g.b., non-magnetic ..	—1·8	0·5	0·03	—1·2	—2·9	—1·4	+4·3	7·0	29·2	33·6	18·0	80·8
H. Golay, London	2001	Double overcoil, s.r., g.b. ..	+0·3	0·4	0·08	+3·9	+0·9	—0·3	—1·0	5·8	32·0	33·7	15·0	80·7
E. F. Ashley, London ..	04022	Single overcoil, d.r., fusee ..	+0·1	0·6	0·06	+0·9	+1·0	+0·7	—2·9	5·0	28·2	36·4	16·0	80·6
E. F. Ashley, London ..	04028	Single overcoil, s.r., fusee .	—0·7	0·5	0·09	+0·9	—2·3	—1·5	—2·5	5·7	30·7	35·6	14·3	80·6
Jos. White & Son, Coventry	33438	Single overcoil, d.r., g.b. ..	+0·2	0·7	0·04	—1·6	+1·9	—1·4	+1·1	5·5	25·6	37·4	17·5	80·5
A. E. Fridlander, Coventry	52683	Single overcoil, d.r., g.b. ..	—2·4	0·4	0·07	—0·7	+1·7	—3·2	—2·0	6·5	31·5	33·6	15·3	80·4
Rotherham & Sons, Coventry	86526	Single overcoil, s.r., g.b. ..	+0·8	0·6	0·06	+2·1	+2·9	+1·0	+0·8	6·0	28·3	35·8	16·3	80·4
A. E. Fridlander, Coventry	52686	Single overcoil, d.r., g.b. ..	—0·9	0·6	0·04	—1·4	+0·4	+0·1	+4·5	7·2	27·1	35·7	17·4	80·2
T. R. Russell, Liverpool ..	87023	Single overcoil, s.r., g.b. ..	—0·5	0·5	0·06	+2·8	+4·1	+2·5	—2·4	7·3	29·9	34·4	15·9	80·2

In the above List the following abbreviations are used, viz. :—s.r. for single roller ; d.r. for double roller ; g.b. for going barrel.

Most of our readers are aware that the end of the Kew year has been made to coincide with the civil year, instead of terminating in October, so that the last report contains the work of fourteen months. The first thing that must strike one is the extraordinary performance of the tourbillon chronometer of Messrs. Stauffer, which has beaten all records, and one cannot help trying to imagine what were the feelings of Messrs. Baume when their watch, so nearly like it, and scoring a grand and almost unheard of total of 87·5 marks, had to give precedence to its sister. That these two watches are the finest that have been turned out no one will deny. Our own children, however, need not be ashamed of themselves, for their performance is quite up to, and indeed exceeds the average, and it is not for one moment likely they will ever meet with two such formidable competitors again.

The *specially good* class numbers 29 in the report out of 709 entries, distributed as follows: 468 for class A, of which 327 passed; 153 for class B, of which 140 passed; 86 for class C, of which 49 passed, and two subsidiary trials.

Now that dynamos are becoming as plentiful as sewing machines, the question of non-magnetic watches is becoming an important one; and as Professors Rücker and Thorpe have made such a speciality of magnetism and magnetic influences, the Kew authorities are in communication with these gentlemen, who have turned their attention to research in this line, with results that cannot fail to be of great service.

Marine chronometers also underwent the usual trials. Although the numbers are not larger, their standard of performance is maintained

On the next page will be found the list of highest records obtained by Complicated Watches during the fourteen months ending December 31st, 1891.

Kew Observatory.—Highest Records obtained by Complicated Watches during the fourteen months to December 31st, 1891.

Description of Watch.	Number.	Deposited by	Marks awarded for			Total marks, 0—100.
			Variation.	Position.	Temperature.	
Minute and split-seconds chronograph, and minute repeater	2286	Jos. White and Son, Coventry	22·9	37·5	16·0	76·4
,, ,, ,, ,, ,,	2970	Baume and Co., London	27·8	31·7	10·7	70·2
Minute and seconds chronograph and minute repeater	2968	Baume and Co., London	28·1	35·3	15·1	78·5
,, ,, ,, ,,	52733	Fridlander, Coventry	29·7	28·4	18·0	76·1
,, ,, ,, ,,	26516	Usher and Cole, London	27·9	30·4	14·1	72·4
Minute and split-seconds chronograph	86764	Rotherham and Sons, Coventry	28·7	35·6	16·7	81·0
,, ,, ,,	86522	,, ,, ,,	27·2	35·3	16·3	78·8
,, ,, ,,	34920	S. Smith and Son, London	25·6	29·1	18·0	72·7
Minute and seconds chronograph	52683	Fridlander, Coventry	31·5	33·6	15·3	80·4
,, ,, ,,	1868	G. Edward and Sons, London	26·3	36·5	15·5	78·3
,, ,, ,,	60183	Antoine Frères, Besançon	27·3	31·4	19·3	78·0
Ordinary seconds chronograph	92485	Rotherham and Sons, Coventry	26·2	34·8	18·3	79·3
,, ,, ,,	1986	Golay, London	30·2	31·8	11·3	73·3
,, ,, ,,	98764	Rotherham and Sons, Coventry	22·1	32·9	16·7	71·7
Minute repeater	36693	S. Smith and Son, London	26·0	34·4	7·9	68·3
,, ,,	52756	Fridlander, Coventry	23·7	26·8	14·7	65·2
,, ,,	9694	W. Clarke, London	16·7	32·2	15·1	64·0

The Markets.

TRACE WITH ABROAD.

EXPORTS.

Plate and Plated Ware show a great falling off in February. One used to see £50,000 or £60,000, but it has now dwindled down to £23,712—over £2,000 less than last year. How is this ?

IMPORTS.

Clocks to the total value of £33,896 were imported in February, compared with £38,262 of February, 1891.

Watches to the total value of £56,744, compared with £57,888 of last year.

Total British *Exports* are about 5 per cent. less than for February, 1891, and *Imports* about 3 per cent. more.

MOTHER-O'-PEARL.

The last quarterly sale, on the whole, did not amount to any very great alteration of prices upon last sale. Six cases Sydney fetched £11; Medium, from £8 7s. 6d. to £9 5s.; Chicken, £8 7s. 6d. to £8 17s. 6d.; West Australian fetched occasionally a little less. Pile I., 188 cases passed the hammer, and were withdrawn—a fate shared by several others, although there was a numerous attendance. Chicken grubby, and pieces were about old prices, some a little less.

DIAMONDS.

Although it was feared by some merchants that prices would not be maintained, and that a fall was imminent, unfortunately for the manufacturer, those fears have not been fully justified. It is true that in some class of goods the demand has shown a little flagging, but good medium stuff has retained its price, the demand for which is quite equal to its supply.

SILVER.

There has been an all-round quiet in the silver market during March, with a general drooping tendency, which during the month has amounted to over a penny, commencing as it did at 41½d. and dropping to nearly 40d.; but, owing to the unfavorable outlook for silver legislation in the United States towards the last few days, the markets were at a perfect standstill, and sometimes no quotations could be obtained.

COPPER.

Copper perhaps is the only metal showing any marked movement in price, which is perhaps to some extent due to speculation. At the beginning of the month it was about £44 15s., from which it has risen to £46 17s. 6d., but the last few days indicated a recession.

TIN.

This metal has been quiet all the month, although firm, and with a slight increase of price from £89 5s. to £89 15s.

SPELTER.

Spelter is practically unchanged at about £21 2s. 6d.

LEAD.

Lead has also remained stationary at £11.

QUICKSILVER.

Quicksilver, despite its physical mobility, has participated in the calm at £7 2s. 6d.

◆

Large Finds of Amber.—News reaches us of large finds of amber during the gales of the early winter along the shores of the Baltic, which would indicate that this fossil resin is not yet exhausted, nor indeed is it likely to be. Still the price of this valuable commodity does not decrease; pieces have been found valued at £1,500. One of the most interesting collections in this country is owned by Mr. Weingott, of Fleet Street, E.C., which includes upwards of a hundred specimens of bright hyacinth red. The same gentleman once successfully manipulated a walking-stick out of a large lump.

Determinative Gemmology.

THE PLEOCHROISM OF GEMS.

By the Editor.

(*Continued from page* 178.)

The Origin of Color in Gems.

I RECOLLECT hearing "a great authority" inform a noble lord that a ruby was a white sapphire with a little *red colored* stuff added, just as his lordship had had his house painted the then fashionable red. But anyone with the slightest knowledge of optics or chemistry knows that colorless ingredients, when mixed, often give rise to brilliant and highly colored compounds. The various hues in which gems occur are the result of processes the very opposite to those suggested by painting. We have frequently observed that it is entirely a selective property on the part of the given gem in absorbing part of the constituent colors of white light and reflecting others, which are called complimentary to each other. Thus if white light falls upon a gem part of the former is scattered by the structures, at or near the surface of the latter, and if the part which reaches our eye is yellow, those rays which have been absorbed are the complimentary color or blue. This will, perhaps, be a little better understood by reference to the following list of complimentary colors arranged in pairs. When a ray of white light is split up into either of these pairs one ray is one hue, and the other its complimentary, *e.g.*, red and slightly bluish-green—

{ Red
{ Slightly bluish-green
{ Orange
{ Greenish-blue
{ Yellow
{ Blue
{ Green
{ Purple

If we follow the spectrum further it will only be to repeat the foregoing in the reversed order. If the hue is, say, between red and orange, then its complimentary will also be between their complimentaries, and so on. Any of these pairs added together (and the same may be said of thousands of others) produce white light. But there is another important phenomena upon which dichroscopic examination depends, and that is, that either of these hues are themselves capable of being split up, as it were, into complimentaries, or we might, perhaps, call them supplimentaries as shown by the use of this invaluable little instrument. Two gems may appear of the same hue to the eye, but the application of the dichroscope informs us that in one case the blue is the result of light waves in such a condition as to be able to pass through the dichroscope without apparent splitting up, and in the other that such is not the case, and that the blue we see is itself composed of another blue, and a straw-yellow. Let us consider the hue by which we know the gem—the color which is either reflected and scattered back to our eye—as the result of the absorption by the gem of part of the constituents of white light, and reflecting back those which reach us; or, in other words, absorbing rays of given lengths, and allowing others to pass or to be reflected as the case may be. Dealing with the transmitted ray in the case under consideration, let us see what takes place. Now, in page 178, we saw that the conductivity of the ruby differed according to the direction in which it was traversed. If we imagine a ray vibrating in all azimuths striking this gem, by the well-known principle of the composition of forces (a law so intimately connected with pendulums) it will be reduced into two planes at right angles to each other. Now, as we saw that there were two planes in the gem lying at right angles, in one of which transmission was more easy than the other, we may be well assured that the easiest one will be one of those chosen. The ray will thus proceed through the gem in two parts, each vibrating at right angles to the other, and is thus said to be polarized in two planes. We shall also find that absorption is much greater in some directions than others.

When Dichroic Gems Appear Monochroic.

We must further bear in mind that when a ray passes *along an optic axis* it encounters an all-sided resistance as shown in Fig 3; a gem therefore shows *no* dichroism when viewed along this axis, no matter what it be. It thus becomes evident that it is necessary to know something of crystallography before one can make much headway in the science of gemmology. We have before us a beautiful crystal of zorcon, Fig 29.

Viewed through either of the prismatic faces, it is beautifully dichroic (green and brown). If, however, we view it from point to point, *along* the optic axis, it is perfectly monochroic, exhibiting neither of the hues we see in the other directions. Upon turning the gem through a few degrees, we see the two hues make their appearance, one of the squares going greener and the other more towards a yellow-brown, which obtain their maximum dichroism when the gem is viewed at right angles to the length of the prism. We have selected a perfect crystal in this case to show the unmistakable position of the monochroic axis in relation to the gem. As we shall subsequently see, there are two of these axes in some gems, dispersed through characteristic angles. We ought also to have noted that when viewed along the optic axis, the two squares were practically of the same intensity. We notice no more absorption in one than in the other.

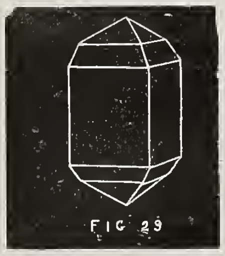


FIG 29

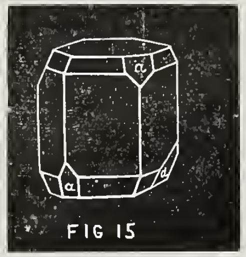


FIG 15

We now place a ruby, Fig. 15, in the dichroscope. Through either of the lateral planes it is beautifully dichroic, but viewed from end to end we fail to get the slightest traces of a second color when the light passes straight through the crystal. If, however, we lean forward, which is the same thing as turning the stone, we get the light falling at an angle to the optic axis, and in so doing passing over the crystal in two directions, along which light does not travel uniformly, consequently the vibrations of the ray become split up in two directions, which must necessarily give rise to different hues. We thus see that in the dimetric and hexagonal systems dichroism is not exhibited along an optic axis, no matter whether the stone be revolved with the stage round the prism, or the prism revolved upon its own axis, it is absolutely monochroic. We have before called attention to the necessity of making both these revolutions, and hence it becomes obvious that our improvements in the dichroscope alone make it a useable and reliable instrument.

The Axechroism of Gems.

We have previously referred to the greater ease with which waves of light can traverse a crystal in certain directions than in others. This gives rise under certain conditions to the splitting up of a ray into two parts, polarized in opposite planes, in which case one ray is more refracted and a little behind the other, *both* becoming differently colored. Upon analysing the light from such gems by the dichroscope the color phenomena becomes more emphasised. We therefore speak of such gems as being *dichroic*, in contradistinction to those which exhibit only *one* hue under the same conditions, which we call *monochroic*. By-and-bye we shall get so accustomed to these phenomena that we shall often be able to detect them by our own optic organs in cut gems, from whose surrounding faces light is reflected through numerous directions. In uncut gems there is practically nothing to distinguish these properties. Before me is a parcel of Burma rubies and spinels, all apparently of the same light red hue. Many of them are unique specimens of crystalization, but they show no signs whatever of different colors through their several axes; spinels and rubies are indistinguishable when worn to pebbles by their hue alone. There is one exceptionally fine low barrel-shaped ruby, about the same height as width, and most delicate tests, save polaric-analyses, fail to reveal any difference of hue through its various axes. Turning to other gems, we are struck by a remarkably different state of things, for in these we see conspicuous differences of hue according to the axis along which they are viewed; sometimes it is one of tone, or tint and shade, but at others it is another hue altogether. Sometimes it is different in one axis only; at others it is different in all three. For these phenomena I have elsewhere proposed the name *axechroic*.

When, therefore, a gem transmits only one of the same colored light along all its axes, it is *mon-axichroic*; when it transmits two, *di-axechroic*; and when all three are different, *tri-axechroic*.

Before me is a packet of waterworn gems of apparently the same hues as each other; the first I take up is a zircon. So far as one sees there is no difference in the hue viewed in any direction (*i.e.*, along either of its axes), but the next gem, a tourmaline, presents a beautiful green *all round* in one direction, but at right angles it is almost black. In other gems we find a further complication; here is an axinite, a blue along one axis, a dark green along a second, while along a third it is cinnamon. The explanation of this we must leave till our next.

(To be continued.)

Transatlantic Jottings.

(From Our New York Correspondent.)

ALL on this side are Exposition-mad. What that display will be like no one can imagine. The whole of our manufacturers are going in largely. Trade associations are fixing on the best means of making our trade exhibit the grandest and most imposing of any. The members of most associations will combine and make united displays, which will exceed anything the world has ever seen.

* * *

THE magnificent collection of gems got together for Messrs. Tiffany and Co.'s Paris exhibit by their expert, G. F. Kunz, has been purchased by J. P. Morgan, and presented to theAmerican Museum of Natural History, New York. It contains over 1,000 specimens, and was valued at about 40,000 dols. So complete and interesting was the collection that it was awarded two gold medals—one for Messrs. Tiffany and the other for Geo. F. Kunz. It contains every species of gem known, all of which are of American origin, and many, I am told, are exclusively American.

* * *

ACCORDING to the summary of imports and exports to December, 31, 1891, compared with the mean of the last five years, the imports into the United States show the following increase: clocks, watches, etc., 97,786 dols.; jewelry of all descriptions, precious stones, etc., 615,194 dols. But in exports, watches and clocks have decreased 32,073 dols.

* * *

BUT the amassing of five years' figures no more tells the way the wind is blowing than does a map which puts a county on the line of S.W. trade winds. If we take the month of December, 1891, and compare it with the previous December, we get a better indication. In this we find that rough materials are on the increase in far more increasing ratio than finished articles; thus, rough, uncut gems amounted to 134,326 dols., against 105,787 dols. of the year before (but that month in 1890 was about double that of some). The total amount of diamonds and other precious stones amounted to 975,772 dols., but the unset and imitation amounted to 11,769,663 dols.

* * *

CLOCKS and watches have had their fates divided, the increase of imported clocks being as 19,798 dols. to 9,865 dols. Watch movements and materials have fallen from 206,094 to 138,362 dols., and, despite the rage for silver goods, the class under which they fall show a decline.

* * *

IN exports both watches and clocks are nearly 50 per cent. behind last year; but jewelry and gold and silver and plated wares all show a remarkable increase, in some cases 500 per cent.

* * *

I HEAR the trade talking about the new process of Martin Brunor, who sets forth his invention as follows: "My process not only effectually and economically removes the green from gold with a minimum loss of gold, but it does not in any way destroy the finish; on the contrary, the articles come from the bath highly polished in the most intricate crevices. With the large machine I can in four minutes' time remove the green and polish a gross of rings. By my process of dip gilding I can in two minutes further time give them a finish that renders the use of the scratch brush unnecessary."

* * *

IT has been decided that the convicts in Southern Illinois Penitentiary shall be set to work to make pearl buttons and pearl jewelry.

Round the Watch Factories.

The Engel National Watch Company have been incorporated by the Secretary of State, in Chicago, with a capital of 70,000 dols.; shares 100 dols. each. Offices, Room 130, No. 115 Dearborn Street.

The Rochford Watch Case Company are making strides. They have recently bought up the plant of the Kenosha Watch Case Company for 30,000 dols. They are about making great structural additions.

The Non-Magnetic Watch Company have issued a notice to the effect that if any further reductions are made in the prices of Paillard Watches, they will rebate the stocks on hand in the trade in cash.

Another "cheap" watch will shortly be on the market. A company has been formed to manufacture one with an entirely new escapement.

News comes from the Aurora that Superintendent Cain will shortly have his new model watch on the market. They have been at a large expense in providing machinery for its manufacture. Their next prodigy is to be a "self-winding" one. They have given up the dial department, and the contract is let to a Springfield firm.

The Waltham are increasing their output since the introduction of their new machinery; the roll in February stood at 2,912.

The Boston Clock Company has discharged its mortgage of 1885 for 125,000 dollars.

Death of Mr. Alfred Pegler, J.P.—We regret to have to announce the death of a very prominent, well-known, and highly-respected member of the trade, Mr. Alfred Pegler, J.P., of Southampton, from an attack of *grippe*, followed by bronchitis.

Random Brieflets.

Silversmithy in the States.—The Gorham Manufacturing Company employ over 1,500 hands, pay nearly 25,000 dollars a week in wages, and used upwards of 1,000,000 ounces of silver last year. They are engaged on some prodigious work for the Exhibition.

Extensive Robbery of Watches.—Over 700 watches and a quantity of jewelry were stolen from the premises of of Mr. W. J. Holmes, 173, Hockley Hill, Birmingham, between Sunday, the 7th ult., and Monday, the 8th. The burglars got safely away.

Does Necessity of Article Constitute Debt?—In a recent case a Welsh judge decided that a second wedding ring was not a necessity, and consequently gave judgment and costs against Messrs. Harris and Son, of Merthyr, who sued a Mr. Hicks for 32s. 6d. for a new wedding ring sold to replace the one formerly belonging to Mrs. Hicks, but which years of hard usage had worn out.

The Malay Peninsula offers a market for small diamond articles. Gold and silver jewelry also finds a good sale.

A Case of Watches was recently stopped by Turkish Customs officers because inside the cases was stamped "Mashallah," a word meaning "Allah preserve you."

Mr. Thomas Gwynne, of the Victoria Tin Works, Britton Ferry, was recently presented by the workmen with a magnificent silver tea and coffee set supplied by Messrs. J. W. Benson, value of £120. There are two things South Welshmen all do—swear by "Mist-er Ben-son" and make each other presents.

The Pearl Humbug, which sets forth that a man is going to deposit pearls like silver in a battery, is still going the round of the press. We suppose when the papers saw it in our trade journals they thought there must be something in it. We have been asked to give a note upon this, and we will do so shortly.

The Swiss Export of Watches for 1888 was valued at £3,400,000; in 1889 it rose to even numbers, £4,000,000; in 1890 to £4,150,000. Setting aside our nationality for the moment, we say "Bravo little Switzerland!"

L'enfant prodigue, who eloped with some £40,000, the property of his widow mother, a jeweler in Paris, has been arrested in this country. Whatever the law in France may be, Sir John Bridge issued a search warrant for the house in which the young Frenchman had resided, with the result of finding £15,000 secreted under the floor. The lady who accompanied him has fled to Belgium, but has been extradited.

A Cardiff Jeweler has twice recently been rewarded for being the means of recovering stolen property. He has handed over the money to the Cardiff Infirmary.

The Ridiculous Side of an "Act" was recently exhibited in Birmingham when a spectacle maker was fined 40s. and costs for allowing his apprentice boy to "mess" about in the shop after 7 o'clock. We should imagine the Inquisitor, or "Dreadful Russia" could not eclipse this.

A Very Clever Capture of three dangerous characters was recently made by detectives near Leicester Square, from seeing a piece of silver sticking out of a parcel one was carrying. Following them, the officers succeeded in capturing the villainous trio, and upon the premises of one of them were found all the apparatus necessary for smelting. Two of them are now safe for six years and the third for twelve months.

A Darlington Pony the other day tried the strength of Mr. David Ventriss' plate-glass window by rearing up and making a plunge at it when in a frightened state, with the result of strewing the jewelry, etc., in all directions.

Mr. Nyburg has had a new trial granted in the case of Mr. Ullman, reported two months since. Costs to stand at present.

Mrs. Hargreave, it is said, cannot bear to have the earrings in her possession now that cost her "darling Ethel" such a punishment, and has sold them. We did not hear of any such compunction in regard to innocent Mr. Spink, and the suffering he would have had to endure, to the tune of £550, had not the guilt of this ——— ? been brought home.

The Fish and the Ring almost finds a parallel in a report a fortnight ago, that a valuable diamond ring was found in the stomach of a pig by some Smithfield pigstickers.

Jubilee Coins, which had been mounted as brooches, were being tendered in the mining districts during the strike.

Ex-Mayor of Manchester, Mr. William Batty, a well-known and highly-respected member of the trade of Manchester, Stockport, and Liverpool, has been called upon to pay the last debt to nature at the age of sixty-eight. His funeral was attended by all the local and civic dignitaries, who thus testified to the extremely exalted esteem in which he was held.

A Painful sensation was caused, on March 10th, in Blackpool by the announcement that a highly respected jeweler, Mr. A. M. Viener, had died from the effects of an overdose of chloral taken medicinally.

Turret Clocks Multiply.—St. George's, Hanover Square, Vestry are the first to realise the benefit of public clocks throughout the metropolis. Their first tower has been erected, by Messrs. Gillett and Johnson, at the juncture of Victoria Street, Vauxhall Bridge Road. The clock has a gravity escapement, and an automatic gas lighter, similar to those of the Manchester Town Hall and the Royal Courts of Justice. In the country, too, several have recently been put up. One at the Goole Post Office, by Messrs. Potts and Sons; and another, by the same makers, at Scalby Parish Church, near Scarboro'. The latter is a double three-legged gravity escapement, compensating pendulum. An 8½-ft. double-dialed timester has been erected by Messrs. John Smith and Son at Walshaw, near Bury, Lancs.

Burglars were surprised recently in Bridge Street, Sunderland, by the bursting forth of the glare of the electric light from the darkness, as in breaking a window they set the electric apparatus to work. Before the armed assistants could get down the knights of the jemmy had fled.

Manchester and Liverpool are quite satisfied with the recent development of better trade. From numerous other reports from various places the North does not seem behind in any way.

Natural Electric Batteries.—While we are disposed to grumble at being obliged to use 50 or 100 accumulator cells in the employment of electric lighting, if we would be accident-proof, it is just as well to remember the number of electric elements that nature has decreed that certain members of the finny tribe shall carry about with them in order to be able to give an electric shock. (Some one has suggested that they employ their powers for illuminating purposes.) It is estimated that a relative of our skate, *Raia batis*, has no less than 20,000 electric elements; but *Torpedo gigantea* has about a level 1,000,000.

Messrs Patik, Philippe, and Co.'s New Factory.—In October last the process of overbuilding the old factory of the above firm at Geneva was commenced, and has been pushed along with such rapidity as to be now complete, and the old one a thing of the past. The two façades are constructed of stone, the front being occupied by offices and stores; three floors are devoted to manufacturing.

"The Oldest Set of Silver Chessmen Known."—Collectors and admirers of old silver should see the fine old set of silver chessmen exhibited by Messrs. Barnet Bros., High Holborn, which, although we might feel disposed to post-date a little, are nevertheless a very fine set of their sort. This extensive and extending firm have galleries crowded with many fine articles of virtu well worthy of a visit.

Gazette.

Administration Order.

Cawson, William Henry, Watchmaker, 11, Woodville Terrace, Breck Road, Liverpool. £45 12s. 3d. Eight creditors. Feb. 17. No. 1.

Shearing, Samuel, Watchmaker, 40, Broad Street, Bath. £38 17s. 3d. Five creditors. Feb. 25. No 4.

Bankruptcy Record.

Britton, John James, Watchmaker and Jeweler, 84, George Street, South Stockton. Receiving Order: Feb. 24. First Meeting: Mar. 23. Public Examination: Mar. 23.

List of Creditors—

		£	s.	d.
Cohen, Israel	Birmingham	15	12	8
Joseph, B. H., and Co.	,,	14	18	7
Sharpe and Green	,,	17	16	2
Foster, John and Thomas	Manchester	10	0	0
Bunn and Dick	Newcastle	21	0	0
Rowntree, B. Mrs.	North Stockton	10	0	0
Hutton and Sons	Sheffield	11	14	1
Fully Secured Creditor		460	0	0

Colyer, Allen, Watch, Clockmaker, and Jeweler, Witham. Receiving Order and Adjudication: Feb. 18. First Meeting: Mar. 9. Public Examination: Shirehall, Chelmsford, April 6.

List of Creditors—

		£	s.	d.
Beanford, —	London	19	6	3
Holmes, W. H.	Birmingham	18	1	4
Ayers, E....	Southport	27	0	0
Groves, W. H.	Witham	22	0	0

Total Estimated Amount—£164 4s. 7d.

Fully Secured Creditors.

		£	s.	d.
Dennis, M. H.	Brighton	374	10	5
Stevens and Bawtree	Witham	10	12	6.

Total Estimated Amount—£385 2s. 11d.

Partly Secured Creditors.

		£	s.	d.
Conway and Co.	London	24	10	0

Furtwrangler, Francis Adolph, Watchmaker and Jeweler, 24, Green Street, Neath, Glamorgan. Receiving Order: Mar. 11.

Peacock, Arthur James (trading as James Peacock) Silversmith and jeweler, 42 and 64, New Oxford Street. Receiving Order and Adjudication: Mar. 2.

Seeley, George Henry, Jeweler, 25, Bridge Street, Llangollen, Denbigh. Receiving Order and Adjudication: Feb. 15. First Meeting: Mar. 2. Public Examination: Mar. 8.

Sherwin, Julius Henry, Watchmaker and Jeweler, 7, Bank Buildings, Crouch, Hill late 94, High Street, Barnet. Receiving Order and Adjudication: Mar. 1. First Meeting: Mar. 18. Public Examination: 34, Lincoln's-inn-fields, April 5.

List of Creditors—

		£	s.	d.
Davenport and Co.	London	125	0	0
Nordmann, J.	,,	30	10	6
Perrier, M. A.	,,	23	10	0
Fully Secured Creditor		85	0	0

Williams, William Courtney Page (trading as Wordley and Company), Goldsmith and Jeweler, 56, Lord Street, Liverpool, and Rushmoor, Penkett Road, Liscard. Receiving Order: March 11.

Woods. Oliver Ernest, Watchmaker, 21, New Road, Shoreham.

List of Creditors—

		£	s.	d.
Evans and Brown	Birmingham	370	0	0
Jones, W.	Bristol	10	7	3
Williams, —	Prescott	19	0	0
Collins, M.	Southwick	80	5	0

Total Estimated Debts—£491 2s. 10d.

Deeds of Arrangement.

Peel, Gabriel Matilda (widow), Jeweler, 24 and 25, Bishopsgate Street Within, London, and 26, Wickham Road, Brockley, S.E. Trustees: Frederick W. Troup, Hatton Garden, E.C., Manufacturing Jeweler, and others. Dated Feb. 23; filed Feb. 24; unsecured liabilities, £12,125 6s. 6d.; estimated net assets £10,500.

Hicks, George, Jeweler, 7a, Mare Fair, Northampton. Trustee: William P. Hannen, Abington Street, Northampton. Dated Mar. 9; filed Mar. 11; unsecured liabilities, £358 12s. 9d.; estimated net assets, £180 0s. 0d.

Lewis Joseph, Watchmaker and Jeweler, 32, Western Road, Hove, Brighton. Trustee: James Spyer, 9, Gracechurch Street, E.C., accountant, with a committee of inspection. Deed of assignment and inspectorship with a view to payment of a composition of 12s. 6d. in the £, payable by ten equal instalments at 3 months from date hereof and 6, 9, 12, 15, 18, 21, 24, 27, and 30 months from July 1, 1892. Dated Feb. 29; filed Mar. 4; unsecured liabilities, £1,933 7s.; estimated net assets, £1,800.

List of Creditors—

		£	s.	d.
Faraday and Davey	London	104	16	9
Smith, John, and Sons	,,	78	5	8
Jacobs and Co.	,,	127	18	9
Favell, R., and Co.	,,	20	12	9
Brockwell and Co.	,,	78	12	2
Saunders and Shepherd	,,	63	19	9
Holland, Aldwinckle, and Slater ...	,,	52	5	6
Bendon, George and Co.	,,	26	6	6
Boulstridge, E.	,,	45	4	0
Grinsell, John, and Sons	,,	21	16	3
Mordan, S., and Co.	,,	25	15	9
Pringle, R., and Co.	,,	21	12	5
Vine and Thompson	,,	25	10	0
Troup and Sons	,,	656	0	0
Blankensee, S., and Sons	Birmingham	69	17	5
Turnbull Bros.	,,	85	18	5
Joseph, B. H., and Co.	,,	53	15	0
Mott, T. L.	,,	30	7	0
Marks, J.	Brighton	27	8	7
Hutton, W., and Son	Sheffield	48	2	10
Harrison, W. W., and Co.	,,	118	5	0
Shaw and Fisher	,,	31	19	8

Maule, James, Watch, Clockmaker, and Jeweler, New Post Office Buildings, Swadford Street, Skipton. Trustee: Harry L. Price, 79, Mosley Street, Manchester, Accountant. Secured creditors £216 10s. Dated Mar. 7; filed Mar. 12; unsecured liabilities, £441 15s. 11d.; estimated net assets, £427 4s. 7d.

Richardson, Robert, Watchmaker and Jeweler, 7, Sussex Street, Middlesbrough. Trustees; Jacob Jacobs, Victoria Street, Birmingham, Wholesale Jeweler, and another. Dated Mar. 9; filed Mar. 15; unsecured liabilities, £3,021 17s. 9d.; estimated net assets, £1,000.

Stephens, George, Watchmaker and Jeweler, 8, Tavistock Street, Devonport. Trustee: Frederick William Dawe, Plymouth, C.A. Deed of arrangement with a view to payment of a composition of 10s. in the £, debtor covenanting to pay to trustee £1 weekly, commencing Mar. 12, 1892, secured by assignment until default, trustee to divide same every six months. Dated Mar. 9; filed Mar. 10; unsecured liabilities, £194 18s. 1d.; estimated net assets, £140.

List of Creditors—

		£	s.	d.
Cooper and Co.	London	51	12	1
Mott, T. L.	Birmingham	26	16	6
Barnell, B.	,,	15	4	9
Stephens, R.	Carn Brea	64	0	0
Truscott, W.	Devonport	12	0	0

Williams, Thomas, Jeweler, 8, Wilson Street and High Church Street, Workington. Trustee: Thomas W. Johnson, John Street, Workington, Auctioneer and Estage Agent. Secured creditors, £150. Dated Feb. 24; filed Feb. 26; unsecured liabilities, £938 9s. 7d.; estimated net assets, £350.

List of Creditors—

		£	s.	d.
Harris, Henry, and Co.	Birmingham	20	0	0
Cohen, Isaac, and Son	,,	210	0	0
Brockington Bros.	,,	100	0	0
Griffiths and Son	,,	50	0	0
Hines, Richard, and Sons	,,	50	0	0
Collett and Co.	,,	16	0	0
Abraham and Co.	Bradford	20	0	0
Wolffe Bros.	Glasgow	18	0	0
Williams, F., and Co.	Prescot	13	0	0
Williams, Mrs. A.	Workington	407	0	0

Notices to Creditors.

Keyzor, George Benjamin, Clock Manufacturer, 39, Hatton Garden, London, E.C. Dividend of 2s. 9½d. at the Official Receiver's, Carey Street, W.C.

Marsh, Charles Henry Cromwell, Watchmaker and Jeweler, 8, Belgrave Road, and 2, Fivepost Lane, Dover. Dividend of 2s. at E. P. Wilson's, 11, Old Jewry Chambers, E.C., C.A., Feb. 22.

Morgenstern, Jacob, Jeweler, High Street, Tenby, Pembroke. Proofs by Mar. 2. Trustee: Official Receiver, Carmarthen.

Rosenberg, Esther, Jeweler, 162, St. Paul's Road, Canonbury. Proofs by Mar. 28. Trustee: A. Edwards, 14, Bennett's Hill, Birmingham.

Dissolution of Partnerships.

Abrahams, S., and Sons, Jewelers, Houndsditch, Jan. 1. Debts by Joseph Abrahams, who continues under the same style.

Appleby, A., and Company, Manufacturing Jewelers, 124, Vyse Street, Birmingham. Dec. 31, 1891. Debts by Alfred Appleby, who continues under the same style.

Defrece and Asher, Dealers in Jewelry and Clocks, 49, Upper Street, Islington. Feb. 26. Debts by John Defrece.

Dollond and Company, Opticians, 1, Ludgate Hill. June 25, 1891. As regards John Richard Chant. Debts by Tyson Crawford, who continues at 35, Ludgate Hill, under the same style.

Hartsilver Brothers and Company, Watch Importers, 95, Hatton Garden, London, E.C. Jan. 20.

Lamont and Boyd, Wholesale Jewelers, 49, Jamaica Street, Glasgow. Nov. 19, 1891. By death of James Lamont. Debts by James Young Boyd, who continues under the same style.

Simpson and Son, Watch and Clock Makers, Princess Street, Wolverhampton. March 5. Debts by Henry Griffith Simpson, who continues.

Tilsley and Company, Jewelers and Watchmakers, 24, Netherthorpe Place, Sheffield. Jan. 13. Tom Pearson continues.

APPLICATIONS FOR PATENTS.

2,550.—"Improvements in clocks," W. P. Thompson and Company, Manchester, Liverpool, and London (communicated by L. Gatta, Italy), 9th Feb, 1892.

2,909.—"Gauge for re-fitting watch and clock glasses," W. Paterson, Glasgow, 15th Feb, 1892.

2,893.—"Improvements in means for stopping clocks, watches, and the like for registering the time of arrival of birds in flying matches," G. Warner, London, 13th Feb., 1892.

2,988.—"Improvements in eye-glasses," B. E. Gregory, Liverpool, 15th Feb., 1892.

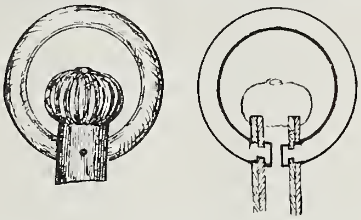
3,370.—"Improvements in and relating to eye-glasses." T. Mien, Glasgow, 20th Feb., 1892.

3,744.—"An improved pendant for watches." F. Hutchins, London, 26th Feb., 1892.

3,700.—"Spectacle eye-shields." A. D. Warren, London, 25th Feb., 1892.

Things New and Noteworthy.

The weakest spoke in the wheel always creaks first, and if there is one particular part of a watch over which there has been more patents than another it is assuredly the bow and pendant. Many of these are far too complicated to be useful, and others only introduce elements of greater weakness. That a bow ought to be "pivoted" in, all seem to admit, but in probably every invention the whole of the strain and friction is thrown upon this small head. This, however, seems to us to have been entirely overcome in the patent adopted by Messrs. Stauffer Son & Co. for their horological prodigy, about which we thought we had heard the last, so far as additions at the price are concerned. To outward appearance this pendant is in every respect similar to any other good keyless watch as seen above. But shown in section, we see that it snaps firmly into the pendant in a little different manner from usual, so that the whole of it can turn backwards and forwards and still present the maximum friction surface, under which circumstances it is better qualified to stand resistance than a common type. But within this pendant there is a slotted sleeve into which the grooved ends of the bow work, from which it is impossible to dislodge them. It will thus be seen that that part of the pendant which constitutes the "safety" is only brought in use when the other part fails.



In and Out the Courts.

More Window Smashing.—At the Thames Police Court, on March 2nd, Andrew Sullivan, an old offender, was committed for trial for breaking the window of William Jenkins, jeweler, 142, St. George's Street, E., on the 25th February. Prosecutor's daughter, upon running to the door, saw the prisoner pulling at the iron bars. From her description, Detective-sergeant Smith apprehended the prisoner, who was identified by her.

Counter-Claims.—At Cheltenham County Court, Cornelius Smith, timber merchant, &c., claimed 16s. for a load of coal, and defendant, James Smith, jeweler, counterclaimed for £2 15s., the value of a clock supplied. Defendant admitted the claim, and with reference to the counterclaim, said the clock was taken to the plaintiff's premises shortly after he (defendant) filed his petition in bankruptcy, in 1887, plaintiff being a creditor under the bankruptcy. Plaintiff admitted he had the clock, but said it was received in satisfaction of an old debt, not provided for in the bankruptcy. His Honor said it was a question whether both plaintiff and defendant had not committed an offence against the Bankruptcy Act. The clock belonged to the trustee in defendant's bankruptcy. Judgment was given for plaintiff for 16s. on the claim, and judgment for defendant on the counterclaim, the clock either to be returned within a week, or plaintiff to pay £2, its value, to the defendant.

A Dishonest Partner.—Nathaniel de Lange, 24, watchmaker, was indicted at the London County Sessions on Saturday for having stolen twenty watches and other articles, value £36 10s., and the sum of £12 6s., the goods and moneys of his co-partnership with Frederick Henry

Gapp, a printer, of Walthamstow. The prosecutor entered into partnership with the prisoner as a watchmaker and jeweler, three years since. A shop was taken at 264 Grays-inn Road, the prosecutor's brother, Charles Gapp, lending him £57 to purchase some stock and furniture. The prisoner stole the goods and moneys in question, and was arrested at Hamburg when boarding a steamer bound for the United States. He was sentenced to twelve months' hard labor.

Illegal Pawning.—At Stirling, on February 29th, Robert Martin Kilsyth pleaded guilty to the theft of twelve watches and half-a-crown of money from various parties, at different dates between December and February last. Accused was in business on his own account, and being in financial trouble, pawned the watches he had got to repair. The Sheriff passed sentence of six months' imprisonment.

A Curious Case.—At Aberdare County-court, on March 9th, Harris Barnett, pawnbroker, Mountain Ash, sued Mr. George Abraham, manager of the National Bank of Wales, for £50, being the value of two gold watches, a gold albert chain, and other jewelry alleged to have been purchased. —Plaintiff's version was that in 1886 the goods were sold, and a settlement had been repeatedly applied for.—In cross examination he admitted that from 1886 until February, 1892, there had constantly been an adverse balance against him at the bank, and a month ago he was served with a writ for £67. On February 25 he paid the debt and costs, and the same day sued defendant and the bank jointly for £66 5s., the value of the jewelry plus interest. There was no suggestion that the articles were deposited as security. After consulting a solicitor the claim against the bank was withdrawn, as he considered the company were not indebted. Upon paying his balance there was a tender of the jewlry by the bank's solicitors, but it was refused. It was never stated to him that the articles were held as collateral security.—Mr. Abraham swore that the jewelry was first given him for the purpose of endeavouring to find a purchaser, and, failing to do so, he retained it on behalf of the bank. The chain he had worn continuously ever since, and one of the watches on several occasions. Pressure was brought upon Barnett to close his account, and when this had been accomplished he (the defendant) offered to buy the chain and foreign coin at a valuation.—Mr. J. J. Thomas, jeweler, having giving evidence of value, his Honor said that, after the admissions made, he must assent to the proposition that unless there had been a sale Mr. Abraham had no right to use the articles, and consequently it became a question of amount only. Judgment would be for £30 and costs.

Dismissal of Appeal.—The appeal in the case of Scott *v.* Mercantile Accident Assurance Company has been dismissed with costs.

Curious Partnership Case.—In the Queen's Bench, Mr. Justice Smith gave judgment in the partnership case of Hyburg & Co. *v.* Handelaur. The facts of this case were these. In 1889 the plaintiffs were owners of a gold enamelled snuff-box, which was said to be worth £130, and they afterwards sold a half share in the box to Mr. Frankenheim, part of the agreement being that the plaintiffs should retain possession of the box. The next thing was that the Plaintiffs handed the box to Frankenheim for sale at Christie and Manson's. The sale did not come off, and Frankenheim pledged his moiety of the box for a debt due to the defendant. The Plaintiffs now sued to recover from the defendant half the value of the box, or the return of the box with damages for its detention. The case was tried before his Lordship some time ago, and the matter now came on for further consideration. Mr. Justice Smith, without hearing counsel for the defendant, held that a part owner of a chattel could not maintain an action against the person in whose possession that chattel was, unless he could also maintain an action against his part owner, because the third person could only stand in the shoes of the part owner. The Plaintiff could not succeed without first paying off the undivided moiety in the box which was held by the defendant. He could not maintain trover without having first satisfied that part of the claim which belonged to his co-owner. Judgment was given for the defendant with costs, but execution was stayed.

A Cool Thief.—Recently Eliza Cook, 26, and Mary Ann Fenn, 25, entered the shop of James Jones, Jeweler, Westminster Bridge Road together; Carter picked out a pair of earrings, put them in her ears, and walked out of the shop, and for a time got away, leaving the other prisoner there. They were both given into custody. Fenn declared that she was innocent. The jury took this view of the case, and acquitted her. The other prisoner, against whom there were previous convictions for felony, was sentenced to six months' hard labor.

A Brave Officer Rewarded.—Early in January Police-constable Chrystal, 267 V, observed five men loitering about a pawnbroker's shop in Newington Butts, and watching until close upon four o'clock, he saw them enter a passage and heard a door burst open. Sounding his whistle the officer dashed into the passage and seized one of the men, who was prizing the door of the pawnbroker's shop open with a "jemmy." The other men made off, and a struggle ensued for the possession of the instrument. The accused, who gave the name of John Rhodes, was indicted at the London Sessions and pleaded guilty. Sir Peter Edlin sentenced the prisoner to twelve months' hard labor, and in commending Chrystal for his courage awarded him £2.

LETTERS TO THE EDITOR.

To the Editor of The Watchmaker, Jeweler and Silversmith.

Dear Sir,—I esteemed the appreciative tone of your remarks upon my paper at the Society of Arts on "Caskets." There is one remark, however, as to the *weight* of the cherubim on the first sacred casket recorded, which perhaps arises from a misconception. They are specially stated to be of *beaten work*. A visit to the gold room of the British Museum will enable the reader to see much ancient work, all beaten out in thin plates, and made as lightly as possible for the size. This would be a very convenient weight for carrying; and it must be recollected that the supply of gold was limited in those early days. I have no authority for saying the poles were *thin*, but the drawing from Champollion, which I will send you, shows them as very graceful and light. Of course I speak of artistic achievement as comparative; but as to the oblong pyxis or jewel box of the Greeks, the vases, also in the Museum, on which they are figured, show them always oblong, and sometimes a thicker proportion than 2½ by 1½, which is in itself a pleasing ratio. The only instances I know to the contrary in the early period are—one with a pent-house roof, looking like a curious prophecy of the "chasse" of the Middle Ages; the other presenting a remarkable similarity to the Saracenic caskets to which I called attention. We may soon be coming to Solomon's opinion, that "there is nothing new under the sun."—Yours faithfully,

J. William Tonks.

[We are extremely pleased Mr. Tonks has accepted our remarks in the spirit in which they were given. We still maintain that, "had the esteemed lecturer applied the same historic criticism to his prototype, he would not have used the older assertions unqualified" any more than modern Dutch, German, or English critics have been able to do. The text carefully sets forth that the cherubim were to be

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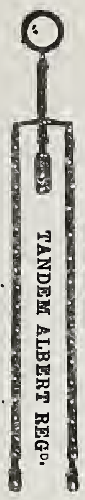
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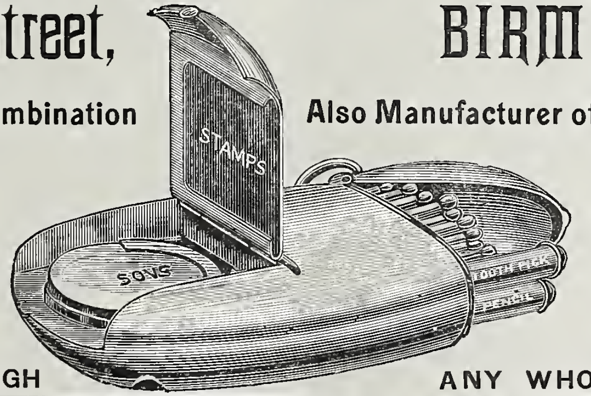

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made *not* in *thin plates* at all, but beaten out on *one piece* (which to our mind conveys the idea of a primary casting of some sort). That the narrator considered they were *not* thin plates is evinced by the details given about covering them up with cloths, badger-skins, etc. (pictures show the covering hanging down a yard or more on each side), so that they must necessarily have been strong to have withstood this usage. All biblical artists that I remember make the cherubim as *statuettes* either kneeling or standing with upturned wings. We are not sufficiently versed in angelic morphology to be able to say if they are right, but we think a census would show it to be the usually received notion. If the impressions which have been conveyed to these artists are correct, we have nothing to withdraw. When, however, Mr. Tonks begins to make his ark fit in with the circumstances of the case, and talks about the limited supply of gold, he begins to apply that very historic criticism, which, if pushed a little further, would have necessitated the qualification to which we referred. Of course everyone has an idea of what "pennyless" slaves, dying from brick-making, and raking the fields for straw, were the Jews; even the chroniclers saw this, and thought it no sin to make them borrow jewelry from the Egyptians, on the eve of their departure; and we are told that when Aaron required the gold for the calf they broke off their earrings, and melted them, all of which was subsequently lost; as Moses ground it to dust and strewed it upon the water, and made the people drink it. It is this limited supply of gold that necessitates us qualifying these statements about the furniture of the tabernacle down to the dishes and covers, bowls and spoons, being all made out of pure gold, and one side of the tabernacle itself, doors and even floors overlayed with it. With regard to the Greek ratios we shall be happy to chronicle our future observations, which will be interesting alike to ourselves and Mr. Tonks. Meanwhile we hope to be delighted and profited by the results of his labors.—Ed.]

WATCH REPAIRERS' CERTIFICATES.

Sir,—In the last number of your journal I notice a curious letter signed by "Pivoters" requesting to be informed of the whereabouts of the "Horological Institute" and the conditions upon which the Repairers' Certificates now granted by this society can be obtained. Following this letter, I send you the whole of the details regarding the examinations,* and I have no doubt you will, though rather long, give them room in your next issue, for the benefit of pivoters and others whom the *Horological Journal* may not reach. It is some satisfaction to realise that this group of backward gentlemen are awakening to the necessity of more knowledge, and have the unusual modesty to style themselves "benighted duffers." I doubt whether they are entitled to sympathy or reproach for the lamentable want of trade knowledge to which they confess. For the credit of the North and their own interests I hope this uncertainty will be removed at the earliest moment by each qualifying for the coveted mark of distinction. With these remarks I am led to make others on the unquestionable advantage of these certificates, by the issue of which the Horological Society is doing good work; over those granted by the City Guilds, it is almost needless to point out they are much more value as an indication of practical ability. The Repairers' Certificate exacts evidence of practical knowledge and skill; that of the City Guilds requires but an ordinary knowledge of book-learning and calculations, and may without much difficulty be obtained without practical experience. Nevertheless, I see these certificates in watchmakers' windows—doubtless exposed with the object of inducing the public to believe they testify to the worth of the possessor as a workman—and in fairness to the public I think should be discontinued, or an arrangement made whereby the Theory Certificate be awarded only after the candidate possesses that for practical ability, and which the Horological Society now offers. Regretting encroaching upon your valuable space to this extent, I am, Sir, yours truly,

"Certificate."

Repairers' Certificates.—Arrangements are now completed for issuing certificates to watch and clock repairers who satisfy the examiners of their proficiency. All practical work executed and questions answered by applicants will be examined at the Horological Institute. The ordinary certificate for watch repairing will be granted to the applicant who satisfies the council that he has a fair knowledge of depths, the verge, horizontal and lever escapements, and keyless work. For the first-class certificate there will be required, in addition, evidence of the applicant's ability to time and adjust, and of his conversance with chronographs, repeaters, and other complicated pieces. Repairers who desire to undergo examination must send to the secretary of the Institute a fee of one guinea, together with the name and address of some member of the Institute or other responsible householder, who will undertake to (1) receive the list of test questions; (2) be present during the period of two hours in which the applicant is writing his answers; (3) enclose the answers in an envelope, which will be forwarded for the purpose, and return it within forty-eight hours of the receipt by him of the questions, etc.; (4) forward the work to be examined to the Institute, together with a declaration, made under oath or affirmation before a Commissioner, that the manuscript and work are to his knowledge wholly the production of the applicant. At present examinations will be held three times a year. The lists of pieces of work and of practical questions, forming the trial task, will be sent out on the second Tuesday in the months of January, May, and September; but the name and address of a supervisor, which the committee deem to be satisfactory, must have been received by the secretary by the first day of the month in which the papers are to be sent out. All practical work executed for the examination must reach the Institute by the second Tuesday of the month following that in which the trial task is received. It will be observed that though the practical questions are to be answered at once, a month is allowed for the production of the actual work. One half of the fee will be returned in the event of no certificate being granted.

[We have never received so much correspondence over any subject as this. As we cannot print it all, we publish this letter, which embraces most of the relevant points raised in connection with the subject.—Ed.]

TRADE CHARITIES.

Sir,—I should be very much obliged if you would be so good as to furnish me with a list of all the charities and societies connected with the various branches of the trade. I have looked for many years through the journals more or less connected with the trade, and have never seen any account of them save just the notice of a meeting. I should take this as a personal kindness on your part; but, at the same time, I think you ought to call attention of the societies to their secluded policy, for it is certain that a little money judiciously spent in advertising would more than repay itself, and is the only means of making the charities known.

Old Subscriber.

[We have received two letters this month upon this subject; and for the benefit of "Old Subscriber" and the trade at large we repeat, as we have often done before—we are always pleased to advertise all charities *absolutely free*. All we ask is that they will send us their matter and notify us of their meetings. We shall see if they think it worth their while to do this when specially asked by would-be subscribers.—Ed.]

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* British Horological Institute,
Northampton Square, London, E.C.

The
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Weight and Fashion.

SOME few months ago, in the course of an article on a kindred subject, we referred incidentally to the matter of Weight and Fashion.* We then spoke in unmistakable terms of our distrust of it as a satisfactory method of pricing goods, giving an emphatic warning against its continued use in the following words: "The tendency to adopt this method is largely on the increase, and it will soon prove itself one of the most mischievous elements that the trade has ever had to deal with. It is simply a fact that no satisfactory—that is, fairly profitable, business can possibly be carried on at all on these lines."

Since writing the above the increase which we then foretold has more than realised our expectations. On every hand this style of pricing has extended, and now, no matter what class of goods one may be selling, the universal demand is to buy at weight and fashion. In spite of this general adoption, however, our opinion of its prejudicial effects on the trade has not altered, and we think it advisable to again call the attention of each section of the trade to its real tendency, and its more than probable results. We say *each section* of the trade advisedly, as this is no longer a matter resting between the maker and the factor only. It has extended from the factor to the shopkeeper, and from the shopkeeper to the purchasing public, who, in buying their single articles of jewelry, invariably ask the price per ounce or per carat.

There are two methods of using this Weight and Fashion pricing in the trade. In one case the gold and workmanship are lumped together, and so much per ounce out and out charged for the articles; in the other case there is a separate charge made per article to cover at once the cost of making and the profit, while the gold is charged as a total weight. The result is exactly the same in either case, the different methods simply applying to different classes of goods, so that we shall have no need to examine them separately. Now to get an exact understanding of the bearings of the subject before us, we must accept it as an axiom that the one aim and object of business is to make profit. Disguise the matter as we may in our intercourse with our customers, there is no getting beyond this fact. Bearing this in mind, let us look somewhat carefully at what is the actual cost of any given article. The two prominent and self-assertive items are the value of the raw material and the wages paid to the workmen for making. And the idea too often seems to be that these constitute alone the real cost of the work. But a moment's thought convinces us that there are a number of other dead charges, usually lumped as "the expenses of the business," of which account must be taken before the actual cost is obtained. For instance, in the shops there come wear and tear of machinery and tools, gas, water, and engine power; then follow the unproductive, but quite essential, salaries of the distributive staff in warehouse and office; and lastly, we must count rent and taxes, as well as common interest on the capital invested. And our contention is that before we arrive at the real cost of our goods, a certain percentage of each and all of these charges must be added to every single article that comes out of the workshop. Then to get a just and remunerative selling price, we must add, over and above all this, such a proportion of profit, pure and simple, as the exigencies of the trade will permit. It may, possibly, be well argued here that these very "exigencies" (*i.e.*, competition, and the usual relations of supply and demand) will in the ordinary course of business settle all these little difficulties for us without our going into such unnecessary details. In practice possibly they will, and our object in ventilating this question is not to prove the possibility of selling above market price, but rather to warn our friends, lest they be selling under a living price. Proceeding, however, we are forced to the conclusion that the only businesslike system of pricing and selling is that based on the facts just specified. Consequently, we have to see as to how far the Weight and Fashion method conforms to, or falls short of, these requirements. And first we find that, as its name implies, it embraces two elements only, viz., gold and workmanship, all the other expenses of production as before noted, as also profit, being merged in the one charge for fashion. Again, to look at the subject from the other side, if this one charge is sufficient to cover all expense and also give a profit, this is all we require, and we might leave the matter without further trouble. But in actual fact, as we know too well, this charge is not sufficient, and for this very reason we are forced to fully expose it.

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*W. J. and S., August, 1890, "Low Prices and Cut Profits."

First, as to the price at which the gold is invoiced. This varies a little with different firms and in different classes of ware, but the usual rate is 66s. 6d. per ounce for 18-ct., 57s. 6d. per ounce for 15-ct., and 35s. per ounce for 9-ct.; these quotations, of course, being subject to a small cash discount. As illustrations of extreme prices in gold, we may mention two cases which have come under our own personal knowledge, of 9-ct. goods being sold to a *shopkeeper* at 35s., and of the same quality being sold to a factor at 33s. 6d. We mean, of course, manufactured articles, and not the metal simply. Now we are quite open to admit that at first sight these figures do allow a slight margin of profit, as the actual cost of the gold into the melting-pot is something less than the above. But there are three other elements of cost with which we have to deal after the alloy is ready for melting. These are the expense of melting and remelting, firing and man's time, then rolling and slitting, and lastly, waste. These matters add considerably to the cost-value of every ounce of gold worked up, and any calculation that omits these considerations is faulty, and likely to lead to loss. The last named—waste—is of especial importance. In the first place there is an inevitable loss on every ounce of gold weighed out to the workmen, no matter how thorough and careful one's system may be. Then after the work is weighed in again by the mounter, there is the loss by finishing—polishing, coloring, etc.—so that, as every manufacturer knows well enough, the finished weight of any article is considerably less than the weight of gold actually absorbed by the making of it. We do not forget that much of this waste is recoverable; but it is not all recovered, and that which is so is recovered at a loss. And again, our contention is, that taking proper consideration of these important items, the figures quoted before represent barely the positive *cost* of the gold to the maker, and in selling at those prices he is simply giving change for a sovereign.

The crucial question for each one to answer for himself is: Is it a reasonable and businesslike arrangement for a man to sell his gold for just what it costs him, or ought he to get a percentage of profit upon it, as per our former remarks? For our part, we contend that it is not "business" at all thus to do, and no capitalist can hope to make even a common interest on his money by these means, let alone getting a fair return for the risk and worry of business—for we must not forget that at the very best, and with the safest houses, there *is* a risk in business. Immediately we have parted with our goods on credit, no matter to whom, there is more or less possibility that we shall never get paid for them, and to insure a fair business transaction, the price at which we sell must be based on this possibility. In selling our gold at the rates mentioned we are taking far more risk than a banker would take, with vastly less than a banker's margin of profit. Or again, we are simply becoming bullion dealers, *minus* the bullion dealer's commission and without his prompt and certain payments. As a matter of business, is it worth doing?

So far for the gold; now let us give a word or two on the fashion. From the extreme variety of articles produced it is impossible for us to quote any typical "fashions," but we know well enough that in no one instance is the amount large enough to give a profit on the weight of metal in the goods. It is nothing more nor less than a charge for workmanship and finish. Hence, however satisfactorily it may represent these matters, it does not affect our former reasoning, as it does not show a fair business profit on the total cost of the goods. It therefore follows that the producer and seller is nothing better than a workman to the buyer, as he is paid merely a wage for the work done. By this system of business the manufacturer loses his position as an independent section of the trade, and becomes reduced to that of a general outworker. This position may do for the mushroom growth of "garret men" or for the dissatisfied and ambitious day worker; but it will not do for the legitimate race of manufacturers, who have done so much in the past to make the trade, and to uphold the quality and finish of the work. Unless some more remunerative system of business is soon again introduced, the whole scope of the jewelry trade as a field for capitalists will be lost, and the manufacturer of jewelry will be left to the uncultured mercies of a lot of irresponsible outworkers. This would undoubtedly mean ruin to every section of our trade, and it is in the hope of arresting attention to this undesirable tendency that we have thus pointedly referred to it.

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Amongst the recipients of the medals and funds of the Geological Society this year was Mr. O. A. Derby, of Rio Janeiro. Mr. Derby has spent more time in the studying the detail of the Brazilian diamond fields than anyone, and was the first to point out Maw's wrong reading of the rocks which were supposed to be the matrix of the diamond, a subject in which he takes considerable interest. Mr. Derby is an American by birth and education, but being brought to the special notice of the late Emperor, he was appointed director of the museum at Rio. We are greatly indebted to him for information respecting "historic stones" from the fountain head, which we have not yet published, as well as for information concerning the diamond bearing districts of Brazil.

Sardinia has for some time been yielding an immense quantity of prehistoric bronzes; analyses of them show that the bronze of the statuettes is not the same as that employed for axes. The statuettes consist of 90·3 copper, 7·4 tin, 2·1 iron; the axes of 87·4 copper, 12 tin, 0·5 lead, and traces of iron.

Notes About Town.

ALTHOUGH it would be very incorrect to assert that trade was anything but quiet, it is acknowledged all round that things have decidedly improved. Black January will be remembered and referred to by many in the future as a record month of bad trade. The fine weather before Easter had a remarkably stimulating effect in many directions; and it was a great pity that we should have had so sudden and unexpected a visitation of arctic climate when people were all desirous of spending money, as it cannot be denied that it is the circulating of money that constitutes trade.

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However, with the return of the lovely spring weather things are now brightening up, and the "Row" is beginning to present a pretty fair picture of fashionable London. Although there is displayed less actual jewelry now than at one time, there are numerous applications of the goldsmith's and silversmith's art paraded not seen heretofore.

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Opera-glasses are perhaps claiming more attention than at any period in their history, since the addition of the handle. I long ago pointed out this would be the case, as soon as the necessity of the painful operation of holding them up to the eye in the old-fashioned way was obviated. The superlative results, too, arising from the substitution of light aluminum for the denser metals is a great advantage. Now that it can be so beautifully enamelled, and the process being sufficiently expensive to prevent its becoming common, it is likely to retain its hold upon the "upper ten."

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With the increased use of these articles, it is nothing more than one would expect that patents in connection with them should be increasing proportionally. These may be divided into two classes: first, those in which the handle is detachable and useable with any ordinary glass, and the other which manipulates the focussing. In the former telescope handles are now very much to the front, the major joint being of very elaborate design, sometimes of enamelled or *repoussé* aluminum, at others of gold. Some even are of gold and gems. In most of the other class the handles are solid, and the bottom of it can be turned to focus at pleasure.

* * *

Up to the present in all I have seen both hands are necessary for focussing, but it would be very easy to construct them so that one finger could pass through the handle and focus either up or down with the greatest of ease; or with the thumb and first finger of the hand in which the handle is held.

* * *

In all the silver and electro-plate houses decided evidences are appearing not only of Spring, but that the world is taking thought of seasonable summer articles. Sugar and creams this year are almost invariably carrying fruit dishes, so that this article, which formerly was neither large or expensive, is now both imposing and costly. Every few months, too, brings out some new styles of decoration of china, and some of them are extremely handsome.

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It would appear that despite the intrinsic art merits of any production, its success must be associated with some kind of what either *is*, or does duty *for*, symbolism. Thus Venice in London has made the idea of the gondolas popular, and now these graceful objectsare reproduced in soy-frames, inkstands, and numerous articles, the craft being in art-china, in many instances very artistically colored. It is said these are taking very well, although in outline they are not far removed from similar articles, *à la* Queen Anne, with the reproductions of which we have been familiar for a long time.

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The alterations to the old premises of Sir John Bennett are pushing towards completion, and the removal of the scaffolding shows that while the crowd-attracting automata will be pratically retained, the whole of the front will be, architecturally, infinitely more imposing, with a loss of what many were inclined to regard as common and tinselly. The business will now be carried on in one shop, Messrs. Eugene Rimmel, Limited, having taken the other.

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Messrs. W. Hutton and Son are about vacating their old premises at Thavies Inn, where they are so widely known, and have taken the extensive showrooms formerly occupied by Messrs. Maw and Son, Farringdon Road. They will thus be only a few hundred yards from their old place, as the new galleries are only just round the corner from Charterhouse Street. The imposing building is undergoing extensive structural alterations, which will no doubt result in magnificent showrooms.

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Messrs. Spink and Son of Gracechurch Street, at a very opportune moment when they have been made so popular, have taken the old business at 17, and 18, Piccadilly, W. as a west-end representation of their old City establishment.

* * *

Proposed Public Clock for Salisbury.—Dr. Roberts, an old and highly-respected citizen, having offered to erect a public illuminated clock at Salisbury, it has been decided that a tower shall be placed near Fisherton Bridge, close to the Infirmary.

* * *

The "Hargreaves Jewels."—The pearls which tempted Mrs. Osborn, together with another of larger dimensions, have been sold by Messrs. Christie and Manson. They were sold in two lots, the whole realising a little over a thousand pounds.

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Messrs. Elkington and Co., of Manchester, recently supplied the silver tea and coffee service presented with an illuminated address to Mr. Josh Dickinson, late Her Majesty's Chief Inspector of Mines.

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At the last chronometric concourse of Geneva (1891) the three first rewards were obtained by chronometers supplied with hair springs manufactured by Dufaux, whose productions in palladiun are well known. Mr. H. Edwards, Coventry, is Dufaux's agent in this country.

Amongst the most expensive fads that have arisen is one that is laying hold in some quarters with American belles of having their slippers "tipped" with silver and even gold. A leading firm patented the idea, and others are following suit with various designs.

It is announced that several hundred clocks and metrological instruments are to be set up in Berlin, worked from the observatory; the towers are to be employed for advertisements, which it is thought will defray their cost.

The Inverness Improvements Committee are about to have a public clock fixed at the east end of High Street. Tenders have not yet been accepted.

Dr. John Evans, Pres. R.S., etc., the great antiquarian, has been discoursing lately upon posy rings. On a previous occasion we made reference to the magnificent display of these made at his residence, on the occasion of the visit of one of the Societies, and we have no hesitation in saying it is the finest private collection we have ever seen.

Determinative Gemmology.

THE PLEOCHROISM OF GEMS.

By the Editor.

(*Continued from page* 204.)

Why some Gems are Axechroic.

FOR the sake of clearness we may perhaps be allowed to recapitulate a little, especially three points. Firstly, we have seen that when a ray of light passes into a gem it is broken up into two parts, vibrating at right angles to each other; secondly, that light is not transmitted with equal facility in all directions; and thirdly, that the hues exhibited by gems are white, *minus* that part of it which is absorbed by the individual stone.

Under these conditions we can readily imagine the possibility of light being absorbed differently in different directions. We can also imagine certain gems possessing this axial absorption in various degrees, without invalidating anything that we have already noticed. We may even proceed further, and suppose these properties to be enjoyed to such a small extent as not to be visible, or only so to assisted vision; or to be so great as to absolutely absorb all the rays which are vibrating in any one given direction. Happily this latter state is not often enjoyed, but the tourmaline is an example of it. If we take a slice of tourmaline cut parallel to the principal axis (*i.e.*, in the direction of the prism) of, say, a dark green hue, viewed singly it is perfectly transparent; if we place another similar piece over it the hue is only a little deepened, so long as they remain parallel, as Fig. 7. Now if both the rays were transmitted with equal facility in all directions we might cross these gems without in any way interfering with the color phenomena; but such is not the case. If we cross them as Fig. 8, perfect darkness ensues; thus substantiating our hypothesis that all rays vibrating at right angles to the optic axis (the ordinary ray) are absorbed, and only those vibrating along, or parallel to the optic axis (the extraordinary ray), are allowed to pass. When the second tourmaline was added, with its axis of absorption in the same direction, it made but very little difference, similar, in fact, to increasing the volume of water through which a ray is passing. When, however, the second tourmaline was placed at right angles to the first, it then absorbed the rest of the rays, and darkness ensued. When we come to speak of the dichroscopy of the tourmaline we shall see the remarkable part played by its great absorption, which under certain conditions absorbs one of the squares almost entirely. So that when one views it through the dichroscope, instead of seeing two squares, we only see one.

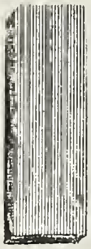

Fig. 7.

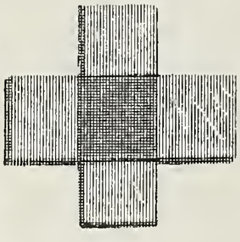

Fig. 8.

It thus becomes evident that axechroism of gems, or the phenomena of appearing of different hues when viewed along, or through, various axes, or directions, is due to the selective, absorptive power of the gem for refracting or absorbing rays vibrating in different planes, analogous to what we have been speaking of in connection with optic-elasticity. We may sum up these phenomena as follows

Firstly, the selective absorptive power which gives rise to what we call color in all non-crystalline gems, and those which crystallize in the monometric system, is constant, irrespective of the direction in which they are viewed. They therefore appear the same hue in all directions. So that if we had, say, a pink pebble which we thought to be a spinel, but upon turning it round saw there was a considerable amount (or even any trace) more absorption in one direction than another, we should know in an instant that it was not a spinel, as this gem crystallizes in the monometric system, and therefore presents no axial variation of absorption.

Secondly, that, on the other hand, in anisotropic gems the selective absorptive powers vary with direction; and, further, it is of different kinds and degrees.

Thirdly, in uniaxial gems the extremities will coincide with maximum and minimum elasticity, we shall, therefore, get two distinct axial colors, which vary in intensity in different gems.

Triaxechroism.

In studying the trimetric, mono- and tri-clinic systems of crystallography we saw that in no direction could we obtain that all-sided symmetry presented in the dimetric and hexagonal systems. We are thus prepared for further complications, and our anticipations are fully realised when we come to examine gems crystallizing in any of these systems. In these we find that in all three directions the absorption is different, being very marked in some gems. Axinite, for example, which may perhaps be a dark green in one direction, a bluish hue in a second, and a cinnamon in a third. In symmetrical planes, such as those presented by the Trimetric system, the axes of absorption are coincident with those of elasticity, but in the Monoclinic it only coincides with the axis coinciding with the axis of symmetry; whilst in the Triclinic, owing to peculiarities into which we cannot enter here, it varies.

Different Kinds of Absorption.

Hitherto we have only considered the simpler kinds of absorption, but unfortunately—or for the sake of our love of the beautiful, I suppose we ought to say fortunately—it does not end here. The various phenomena which most concern us, and their relation to absorption, may be tabulated as follows, when a ray of white light falls upon a gem :—

A.—Part is Reflected.

1. The reflection may be regular, as somewhat like as from a mirror.
2. The reflection may be scattered, by which we *see* the object.
3. Under certain conditions *part* of the light may be polarized.
4. Under other conditions *the whole* of the light may be polarized.
5. Under certain conditions the reflected ray may be of the *same* hue as the transmitted.
6. Under other conditions the reflected ray may be of a *different* hue from the transmitted.

B.—Part is Absorbed.

7. The absorbed may be the *compliment* to the reflected.
8. The absorbed may be the *compliment* to the transmitted.
9. The absorbed may be the *compliment* to both.
10. The absorbed may be the *compliment* to neither.

C.—Part is Transmitted.

11. The transmitted may be the *compliment* to the absorbed.
12. The transmitted may be the *compliment* to the reflected.
13. The transmitted may be the result of other alterations in its passage through the gem.

Further, it may be considered that gems are alone in being visible by light, which is both transmitted and reflected, for the light that leaves their surface has entered more or less *into* and *passed out of* them again. In no case are *color* phenomena the result of simple reflection from a polished surface as from a highly polished mirror. In the latter case the light is reflected at the surface without entering, or even dividing, at the surface; therefore, light which leaves the surface of metals is not polarized.

The Relation of the Transmitted to the Reflected Ray.

Although in the majority of the gems light which is transmitted through them is the same as that in which the gem appears by reflection, there are instances where this is not the case. The most pronounced example of this is the Alexandrite, the structural peculiarities of which in their entirety are too complex for thorough explanation here. First, however, we notice that although a beautiful dark green (say before cutting) when viewed by reflected light, held up so as to allow the light to be transmitted through it, instead of getting this same dark green, we get a complimentary hue to it, viz., red (12). The same effect is obtained by holding up a gold leaf to the light, when the hue is no longer yellow but bright green, according to the thinness of the leaf. If, however, we place the Alexandrite in the dichroscope we realise that there is not such an equal division of the original ray as we might imagine, or as in the case of the gold leaf; and some of the green rays get through, so that we get one square a modified dark green and the other a red. Research in connection with this gem is greatly needed, but it appears at present that phenomena are emphasised by the thickness of the stone, as (viewed by white light) in a cut stone a great part of the light is reflected without suffering much alteration, and appears as a green, while part of it which is reflected up through the gem is a raspberry red, every intervening shade accordingly occurring. If, however, we employ a light, poor in certain rays, such as artificial or night lights, we lose the green almost entirely, and the gem appears of a red hue, the reason of which we must leave till our next.

(To be continued.)

Sheffield Notes.

(By our own Correspondent.)*

THE Council of the School of Art have been fortunate this year in securing the presence of Sir Philip Cunliffe Owen at the Annual Conversazione just held in the Mappin Art Galleries. The long-established custom of bringing down someone who really has something to say by way of stimulating the study of Art in our midst has invariably been appreciated by the students. The director of the South Kensington Museum has the additional advantage of a long and intimate association with the Sheffield School, and students trained here. This fact induced Dr. Sorby in the course of the evening to describe Sir Philip, *more Hibernico*, as a "Sheffielder who was not born in his native town." His reminiscences of Mr. Young Mitchell, Godfrey Sykes, and the band of ornamentists trained under them were extremely interesting. "Godfrey Sykes," he said, "had left his lasting monument in the decoration of South Kensington Museum, a work which had since been duly appreciated in the metropolis, and which had set an example that had been followed ever since."

MR. JOHN YEOMANS COWLISHAW, president of the School of Art, drew attention to the increased facilities for usefulness possessed by the school in consequence of the increased grant from the corporation. The free studentships, of which there are twenty, are offered for competition among those youths of the artisan class who are apprenticed, or who intend to become apprenticed, to some staple trade of the town in which a knowledge of design is necessary. The grants received from South Kensington also enabled the council to offer local scholarships, amounting to £52, to advanced students between the ages of eighteen and thirty, renewable annually for three or four years. It will thus be seen that the town is doing its utmost to enable the silver trade, to which the bulk of the students belong, to hold its own in the face of the keen competition from abroad now being experienced.

MESSRS. WALKER and HALL, Howard Street, have just learned that they have again been successful in the Australian Colonies, having carried off four gold medals at the Tasmanian Exhibition. For silver and electro-plate the Australian market is a steadily growing one, and not a few firms in the town depend at present for anything of activity with which they are blessed to this market alone. Although for the present, owing to the general depression prevailing at the Antipodes, not much is to be expected from Australia, yet our manufacturers are assiduously cultivating the market, and confidently look upon it as an ultimate set-off against the loss of the American trade.

THERE does not seem to be much prospect of an early improvement in the silver and electro-plate trades. However much individual firms may boast of exceptionally good orders, trade is on the whole decidedly dull. One satisfactory feature in the present situation is the relatively increased amount of Art work turned out, especially in silver. The competition among the leading houses, severe as it undoubtedly is, does not so much take the form of producing cheaper as of more artistically designed work. Messrs. Mappin and Webb have been fortunate in securing the order of a magnificent candelabra and centre piece to the value of £1,000 for the officers' mess of a crack regiment, and the same firm have just supplied to the order of a foreign nobleman a travelling and dressing bag valued at 350 guineas.

THE challenge shield, promised some time ago for competition among the ambulance societies of the town by Mr. H. L. Brown, the design for which was described some months ago in these notes, has now taken concrete form, and is being exhibited in the shop window of Mr. Wm. Colver, Market Place. Unlike the Bingham shield, described last month, the panels are executed in raised chasing, instead of being engraved on the flat. This is as it ought to be, as engraving, unless when exceptionally well done, looks out of place on a work of this character. In the ambulance shield, the groups representing those Sheffield trades in connection with which accidents most frequently happen, although not manipulated exactly in the style of Godfrey Sykes, are still above the average in point of design and execution. In a general way it is to be regretted that donors of challenge shields and cups do not more fully realise the adage about doing a thing well that is worth doing at all. It is all very well for the manufacturer who has correctly enough estimated the artistic capacity of the British Philistine—who, after all, is his principal customer—to turn out goods accordingly. But a challenge cup or shield is not intended for the market, and is presumably exhibited as a work of Art of some sort. It is, however, notorious that the best Art workmen, who are perfectly well-known in the trade, are rarely employed on works of this kind. Their terms may be high, and it may, moreover, seem like casting pearls before swine to waste their work on the average recipients of these trophies. Nevertheless, on public grounds, one would like to see these works able to bear a greater degree of genuine artistic criticism than the majority of them are capable of doing.

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THE Sheffield Goldsmiths' Company, a jewelry establishment which some two years ago took to the business of the late Mr. W. Brown, of High Street, has already outgrown its premises. The shop at the corner of York Street and High Street with its well-set-out and electric-lighted windows is one of the most attractive in the neighbourhood. The frontage to High Street, however, has been found insufficient, and it has now been determined to extend it by taking in the adjoining shop. This will materially increase the internal accommodation besides enhancing the general effect from the outside. Pending the completion of the alterations, the company have taken temporary premises in the splendid pile of buildings recently erected in Fargate, near the Albany Hotel.

THE incidental remark in the above paragraph to the effect that the Sheffield Goldsmiths' Company are successors to the late Mr. William Brown reminds me that the real genealogical successor to Mr. Brown is once more forging to the front. In other words, a telling advertisement in the local press informs me that Brown's watches, which everybody is supposed to know to be the best, are to be had at such a number in High Street. This won't affect the Goldsmiths' Company, who are by this time sufficiently well known by their own name; but what Mr. H. L. Brown down in Market Place thinks about it is another matter. The battle of the Browns is probably about to recommence to the great advantage of the advertising columns of the Sheffield Press. Although, as a matter of course, rural customers will walk into the wrong shop, yet on the whole the rival Browns will no doubt find themselves extremely useful to each other.

THE shop accommodation in the centre of the town is gradually being increased. In Fargate the new premises of Messrs. Leader and Sons will render available two or three shops besides that part of the building required by the firm itself. Further on, the shops on the ground floor of the Young Men's Christian Association Buildings are nearly all occupied at good rents. Further on still, the wilderness, which since the demolitions in connection with the improvement scheme has practically cut the business part of the town in two, shows signs of being covered with buildings in the near future. At all events large portions of it are now in course of being excavated, and although for some time to come we may have to tolerate Sanger's Circus and the hoardings of the bill-posting company, yet, as the walls of the new Town Hall begin to show themselves above ground, the remaining lots are sure to go off.

UNFORTUNATELY saw-piercing may be regarded as one of the comparatively lost arts of the silversmith's craft. Although one or two large firms have to some extent revived it in some of their more recent specialities, it is more as an adjunct to some other style of ornamentation than as an independent art. The saw-piercers trained under Mr. J. A. Rhodes, although still doing what little there is done in their old occupation, have all turned their attention to a less ornamental, but more remunerative branch of the same trade. So remunerative is this new departure that I am specially asked not to be more particular. The point for manufacturers to note is—that should there ever be a revival of the demand for artistic saw-piercing, there are still plenty of hands in Sheffield capable of supplying it.

A BEAUTIFUL stained glass window by Mayer, of Münich, has just been erected in the suburban parish church of Heeley, in memory of Mr. Young Mitchell, the well-remembered head master of the School of Art.

Birmingham Notes.

(By our own Correspondent.)*

IT is not always satisfactory to be a prophet, and it is with anything but a sense of gratification that I have to record the fulfilment of my warning of last month. I refer to the "after-Easter buying" by our factors, which has this year proved the most serious disappointment that our manufacturers have ever had to put up with. In many instances the wholesale travellers have not come home at all for this holiday. In many more cases they have gone away again without buying anything; while those who have looked at the makers' stocks have bought with but a sparing hand. Consequently the manufacturers' anticipated harvest has not been forthcoming, and several of their bagmen have had to report a blank week, while with nearly all of them just one or two parcels represents the whole week's work.

THIS "holiday buying," which years ago used to be a recognised institution in our local trade, has for some time past been gradually losing ground, and for the future it is likely to linger as a tradition only, and not as a fact. Certainly after the last fortnight's experience the sorrowing and stock-laden manufacturers will not again build their hopes upon it, Easter, too, next to Christmas, used to be the very best occasion of the year, as, coinciding with the Jewish festival, it called all the travellers, both Jews and Gentiles, home together. The only epitaph I can suggest is "Ichabod."

UNFORTUNATELY, on this occasion at any rate, this lack of buying is not the result of "cussedness," but is simply the reflex of the actual state of the trade in the country, as experienced by the factors' travellers. One and all, without exception, have gone through very bad times since Christmas, and their stocks have no need of replenishing. Besides, the prospect for their next journey is far too discouraging to give them heart to buy fresh goods.

AT first sight this abnormal state of depression seems hardly understandable, but on thinking it over the sequence of events producing it can be readily traced. Undoubtedly the first link of the chain was forged some eighteen months ago with the suspension of Messrs. Baring. Running concurrently with this was the endless series of labor disputes and complications, culminating in the recent coal strike. Another matter tending to the same end was the disastrous floods and ruined harvest of last autumn; while the climax was reached in January with the death of the Duke of Clarence.

NOW I do not pretend to say that there is much solid comfort in thus tracing out the causes of our present spell of bad trade, but it should at least point a moral of patience. It is no use unduly worrying ourselves. These matters are totally beyond our control, and will certainly right themselves in time. Our only plan is to do the best we can and to "lie fallow" for a little time.

MANY of the employers here were glad of the excuse of the holiday to give their workpeople an extra long vacation. After all, I think these quiet times fall most severely on the workmen. The majority of them live but from hand to mouth, and even at the best of times have little opportunity of saving anything out of their weekly (or perhaps it were often more correctly spelt "weakly") wage. Hence at times like this many of them suffer actual want, or are forced to contract debts which cripple them for long after.

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ON the other hand I know that some of the working jewelers make splendid money and live well. Kid gloves and silk hats are not quite unknown among the "hare's feet" of Birmingham.

I MUCH regret to notice that the older representatives of the jewelry trade here seem to be dropping off. I have, unfortunately, to refer this month to the death of Mr. John Thomason, which occurred on the 13th ult. Mr. Thomason was better known personally to a former generation of the trade, as during the last few years the increasing feebleness of old age has prevented him taking any active part in trade matters. Still he appeared at his office in Spencer Street as regularly as he possibly could. Mr. Thomason was a Councillor of the City of Birmingham, and did some good work on the various committees of the council. Latterly, however, the growing infirmities of deafness and blindness have seriously affected both his enjoyment and his usefulness.

MR. THOMASON'S firm—formerly as Hilliard and Thomason, then as J. Thomason and Son, and recently as J. Thomason and Nephews—has held a high position among the Birmingham silversmiths for many years.

STRANGE to say, in spite of the depression to which I have so lengthily referred, there have been a good number of expensive diamond articles selling lately. Since writing my last notes I have heard of several of these high-priced goods being disposed of. Diamond rings especially are a frequent sale, while valuable bracelets and hair ornaments are often called for. These exceptional sales, although neither constant enough nor of sufficient volume to form a turnover, are yet of great use in helping to fill up the day-book; more especially in quiet times like these.

I SEE that the latest rumour has it that, after all, Prince George of Wales is to be betrothed to the Princess May of Teck. Have those manufacturers, who had presentation work in hand some few months ago, held it over awaiting the course of events, or has it all been resigned to the melting-pot?

SPEAKING of these presentation matters suggests the query, Why *will* donors, whether committees or single parties, postpone all negotiations for the things they want, until the very latest moment? I never yet knew of a present which had not to be procured in a hurry. As a rule, this means a less satisfactory result than if more time had been given, while it is a constant source of worry to the tradespeople through whose hands the matter passes. Could not our retail friends, when consulted about these affairs, throw out a hint or two to the effect that a speedy decision would be advantageous to all concerned?

I BELIEVE no trace whatever has been discovered of the man Marks, whose disappearance I noted last month. I am told that the committee of the Jewelers' Association have the case in hand.

SEVERAL of the most prominent members of our trade are at present away holiday-making. This season of the year is a favorite one on the part of the jewelers for taking a holiday, as, generally speaking, it is the quietest time of the year.

THE new managing director of Adie and Lovekin, Limited, of Regent Street, has youth and energy, if not long experience, on his side; and under his control the firm ought to make good headway.

MESSRS. LARRETT & CO'S final offer is 10s. in the £., cash down. This, probably, is better than 12s. 6d. in extended payments, and I think it is likely to be generally accepted by the Birmingham creditors. I should certainly advise its acceptance as the best and speediest way out of a bad job.

I HEAR of another stoppage—also a London man—which is causing some little flutter amongst the local makers. In this case, however, the blame rests to a great extent on the creditors' own shoulders, as it has been well known in the trade for a long time that the account referred to was a more than usually risky one. Those who are content to sell their goods under this knowledge must also be content to make the best of the results.

I HAVE lately had the opportunity of inspecting a sort of memorial shield, which, as intended for a novel purpose, opens up a fresh field for our art metalworkers. This shield was executed to the order of a schoolmaster, and his intention is that it shall be hung each week at the head of the class which has been the most deserving during the preceding week. He hopes it will thus form an incentive to hard work and good behaviour on the part of his pupils. The body of the shield is of polished oak, ornamented with a laurel chaplet and an open book, these latter being elaborately wrought in metal and well finished and gilt. The workmanship and finish are almost equal to gold work. I shall hear, and will let you know later on, if this example is followed by other schoolmasters of our city.

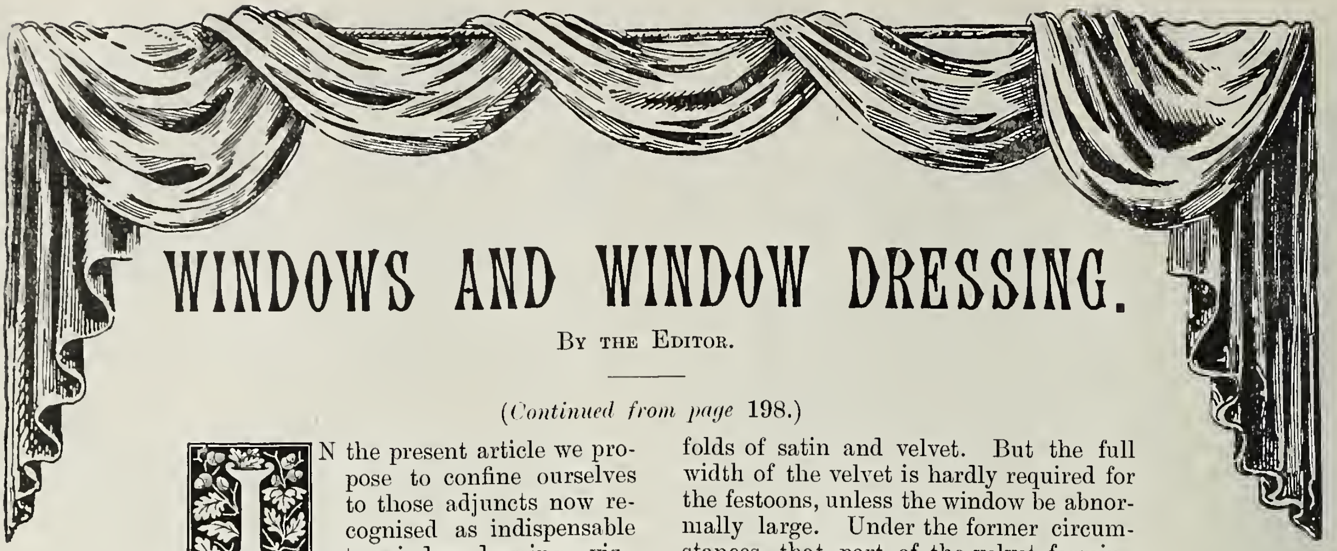
MAY 9 1892

THE vexed silver question is again coming prominently to the front, the present rate of exchange against India being simply ruinous to all financial relations between there and England. A resolution is to be moved in the House of Commons declaring that, "in view of the extreme danger which threatens all interests in India, from the increased difficulties caused by the depreciation of silver, it is necessary that prompt measures should be taken to establish a gold standard in India." This is a matter of importance to all large users of silver, and it will be well for the trade to keep it in sight. Perhaps the Committee of the Jewelers' and Silversmiths' Association will kindly note this, and inform their members if any action by the trade is advisable.

PETTY thefts by workmen, I am sorry to notice, are becoming again more numerous. Or is it that the silent operations of the Association "Vigilance Committee" are finding out the culprits and bringing them to justice? I hope this is the case. At any rate the frequent prosecutions will tend to put a stop to the practice.

HIGH-CLASS watches, again, are things in almost daily requirement, and many of our wholesale firms keep an assortment constantly in stock. As soon as one is sold it is replaced by another. They are thus enabled to meet any emergency, and fulfil any immediate demand for such goods.

VERY recently a new firm of factors has also come into existence who have been buying somewhat largely from the manufacturers. We are told there is plenty of money at the back of this venture, while the travelling partner is a man well known, and a successful salesman.



WINDOWS AND WINDOW DRESSING.

By the Editor.

(*Continued from page* 198.)

In the present article we propose to confine ourselves to those adjuncts now recognised as indispensable to window dressing—viz., window-draperies, whose adoption in good houses is all but universal. Sometimes £25 is spent upon this one item. But it is by no means necessary to spend a lot of money, although of course by so doing much more imposing effects can be obtained. Still, with a single width of velvet, or even with one cut in halves, some really good results are obtainable. Moreover, there is one great advantage in being able to turn the material about, as should the sun—or what is often almost as bad, the strong light—cause the prominent parts to fade, as is always the case with set designs, these can be turned under. Beside this, when the folds are fresh, each time the window is dressed the same positions do not always catch the sun, which they necessarily must under other conditions.

In employing draperies of this sort a cornice of some kind is necessary. This may be of 1-inch brass rod, which looks best dark bronzed. Some firms have adopted large cornices up to 2½ inches. In some instances these have been ebonized; in others, covered with velvet, either of the same color or a pleasing contrast.

One of the simplest forms of drapery is shown at the head of this article. It is a single width, and is simply passed gracefully over the cornice six times, making five festoons. The three centre folds are somewhat similar, and the centre one may be either larger or smaller, if desired, than the other two, while the end member is made far fuller. The ends are "cut upon the cross," with longer edges coming the same side, so that when they are allowed to fall from the cornice they can be arranged in decreasing folds. The wrong side of the velvet should be lined at its ends with about a half a yard of satin, so that the folds show satin and velvet alternately. There is another little preparation of the velvet necessary to be able to do this nicely, and that is, that after allowing for the curtain-drop and the first large festoon, the velvet should be sewn together edge to edge, otherwise, passing it over a fold of this description it would present a right and a wrong side alternately. Another plan is to line the velvet with satin all through. It then presents alternate folds of satin and velvet. But the full width of the velvet is hardly required for the festoons, unless the window be abnormally large. Under the former circumstances, that part of the velvet forming the festoons can be made out of one width, split down the centre.

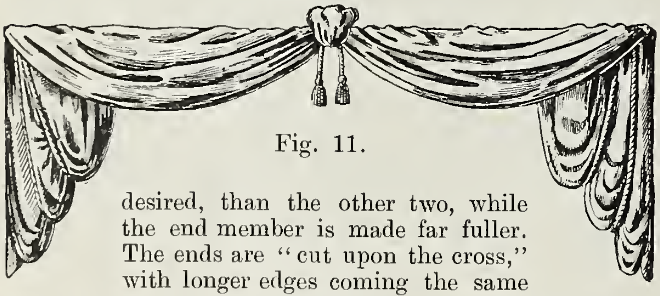


Fig. 11.

In this window it will be observed there are no trimmings of any sort, no tying up, or even cords and tassels, although they might be very effectively introduced.

The design, Fig. 11, is effected out of a single width, fully a yard shorter than the one just described. The end of the velvet is placed over the top of the cornice and allowed to fall the desired length on both sides to form the curtains. The back now hangs in a long curve, with its back towards the window. First pass two or three short pins *vertically* through the velvet into the cornice at the top of the curtains, to prevent any further shifting; next take the centre of the drooping curve of velvet and tie it with a cord and tassels into a graceful flat bunch; lift the latter to the top of the cornice and allow the tassels to drop over the front; now draw the upper folds, the right side forward, over the cornice in a loop from the centre to the top of each curtain and arrange gracefully. The whole performance will not take longer than it has taken to describe. The curtains may now be looped up with cords and tassels, and present an appearance so entirely dissimilar from the foregoing—although obtained with the same width of velvet—as to present so great a change as to be equivalent to having "a new window."

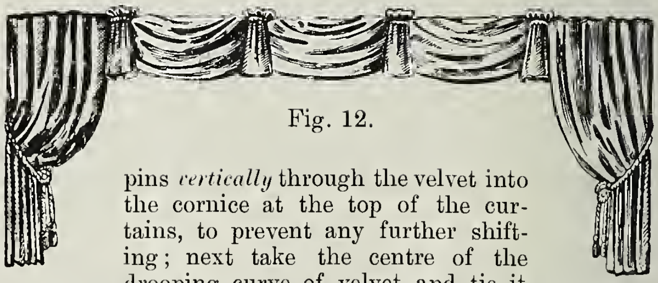


Fig. 12.

But there are numerous other designs that can be made out of this one width, amongst which may be instanced Fig. 12, where we are introduced to something entirely different. To obtain this effect we proceed as follows:—First, measure off the centre of the length, then at equal distances from it on either side make either a box pleat or a bunch tied up with cords and tassels. The former is made by taking, say, six or eight inches of the material, and pinning it back to back, then folding the loop thus made equally over the dividing seam at the top, and opening out its width at the bottom half again as wide. The velvet can now be gently nipped into the pleat. The back close to the re-entrant angle can be slightly drawn over a long thin pin from the bottom upwards, to make it hang gracefully and not like a slab of stone. This operation being repeated four times, forming three festoons, the velvet is now fixed to the cornice a little loosely. A pin is then placed at the end of the last pleat, and a triangular fold of the curtain passed over the cornice now causes the drop-curtains to fall down the front, which may be looped up at any desired length by a cord and tassels passing through a screw-eye in the side of the window behind the curtain.

If the velvet is not sewn up, another very effective bunch pleat can easily be made, instead of the box pleat, by passing, say, six or eight inches of the width over the cornice from the window side; then taking up a whisp over, say, a crunched-up paper flattened ball, bending a pleat at the same time: this can then be tied up with cords and tassels, and "drawn" so as to make it hang very gracefully. Here and there a pin will be required to keep it in its place. Tissue paper forms good stuffing for these operations, as it obviates much nipping about, which is so prejudicial to velvet, as it so easily marks, especially if it be good quality.

In either of these the drop-curtain can be dispensed with, and as it forms such an important item in the length of the stuff required, the cost will be reduced by nearly one-half. Still, some sort of curtains, however short, are always preferable, and serve as such good receptacles for the electric lights.

(To be continued.)

Diamond Field Notes.

(By Vaalite.)

Kimberley, April 1st.

THE Exhibition is still the leading theme out here. Everyone is so confident of the future development of this country, from the signs that surround us on all sides and are daily increasing, that they are very desirous of having a really good Exhibition, and no doubt they will succeed. There will be some very cheap excursions from America, and probably from England, arranged by Messrs. Cook. As special inducement, the De Beers have made a visit to the mines part of the programme. This is a new kind of thing to satisfy a curiosity in which everyone shares to a greater or less extent. Speaking of the belief in the immediate future, reminds me of a little episode that recently transpired here. One of our wealthy men, who is behind the scenes in some big things that will shortly be made public, offered to bet some thousands that in a very limited time the inhabitants in and around Kimberley would number a million, but no one accepted the bet. The fact is, an enormous amount of prospecting has been going on, and the value of properties has been so well ascertained, that it is said that the De Beers are contemplating purchases of unheard-of dimensions, reaching, in fact, eight figures. But for all that they are developing the Kimberley mine, and have now added some hauling machinery of remarkable dimensions.

I suppose your readers, as buyers of diamonds, will have heard all about that large buy of the syndicate, which went into millions, and the subsequent action on the part of the company. But although in some instances it caused large parcels (the whole not amounting to six figures) to be offered at below the market value, the effect will not be a permanent one. Of course no one can say how long things will remain *in statu quo*. When one looks round at the favorable indications of large and important discoveries all round, and the number of syndicates that are developing what are said to be most favorable claims, one cannot help being prepared to hear great changes in the not very far distant future. Those on the Modder River are turning out very satisfactory; and another, which is certainly, from other points of view, very interesting, is that gold quartz has been found very near Kimberley, so that the diamondiferous pipes appear to show no kind of preference for the strata through which they pierce. In the early days, when the shales had not been bottomed, it was thought that it was to the carbonaceous matter contained in them that we were indebted for the diamond, and that it had been formed in its present matrix; but when the shales were bottomed the idea had to be allowed to be set aside, as the pipes were quite as diamondiferous while passing through the melaphyres or the quartzites as when passing through the shales. But what was unexpected to some, but, of course, *well known* to others (*i.e.*, those people who always know after a thing has happened), at 1,250 ft. shales have been again struck. But for all that the fragmental condition of the rock, as anyone would admit who examined a shovelful of wash-up, precludes the idea of the contents of the pipe—the Kimberlite as it is called—being the home of the diamond. If a lump of it be carefully removed from the mine, and weathered and washed, it will be found to be full of pieces of quartz which have been split up, and which exhibit fractured faces, and the same may be said of diamonds. The discovery of gold, however, so near the existing mines may lead some people to come forward and assert with the old Greek naturalist that "Verily gold alone formeth the fitten and propper womb for the diamond." I should think this is just about as likely as it is that when he was speaking he meant the diamond at all. But the De Beers have not the first hand on all likely and promising properties; there are very favorable properties in Bultfontein, Dorsfontein, and Alexandersfontein, which surround the great mines, upon which prior claims exist.

Jagersfontein continues to put out, not only fine stones, but a good quantity; in January and February they totalled up over 22,000 carats. Otto's Kopje are washing yellow with such satisfaction that it has been decided to erect compounds to prevent the I. D. B. At the depth of 800 ft. they are also "finding." N. E. Bultfontein still continues hauling and washing; sometimes they total up 4,000 carats a week.

The greatest sensation of the hour is perhaps that over the reported discovery of diamonds near Pretoria, the capital of the Transvaal, where four or five diamonds are said to have been found in what appears to be blue ground, but why this should have created such a furore is difficult to say. I heard that several people have found garnets, and others illmenite—or, as they call it out here, carbon—which I should look upon as even better signs than the reputed discovery of the diamonds, which by many are believed to be only "salt." At any rate, if they are, the Government will have no cause to grumble, for they have had applications for stone-breakers' licences for any number of claims from men from all parts.

Now in Christiana, on the other hand, there certainly is some really good, genuine diamond-finding going on by poor men, who get enough to keep themselves by it. One man found one the other day, for which he realised £30. In fact, scarcely a day goes by without someone finding a passable stone, yet there is no thought of extensive mines and no rushing.

The Gordon are washing yellow profitably, as the North-East Company have been doing for some time. The former are still flooded out, and this commenced just as they were about to start to haul the blue in large quantities, which must have been very disappointing. Still they have had some remarkable finds. Some time ago I saw one of these stones of 20 carat, which I have no hesitation in saying was the *whitest* stone I ever saw. I placed it beside a test stone used by "the finest judge in the world," and the latter stone was simply murdered. It was a perfect octahedron in shape—perhaps a little on one side—but it was not smooth and bright as they often are, it being built up of countless steps, which gave it a very rough exterior, and even in the face of this its brightness and whiteness were things never to be forgotten. When cut it ought to make a 10-carat stone, and fetch £1,000—*i.e.*, according to what I have known stones to realise.

I have recently seen what I have no hesitation in pronouncing to be, in many respects

The Most Remarkable Diamond in the World.

It is about 180 carats in weight, is practically without flaw or blemish, but, unfortunately, is not white. It is the shape that is so absolutely unique, which I will try and explain: First, imagine it to be a true and perfect octahedron, then imagine the upper pyramid cut off at about half its length by a plane of a cube, thus forming a perfect table, farther, a little cubic face at the opposite apex forming the culet, the corners taken off by curved faces of the rombic-dodecahedron, the upper faces left carrying distorted faces of the three or six-faced octahedron, thus forming true pavilions, with which the skill facets form a perfect upper part to the stone. The octahedral planes below are so modified that I am sure that not one in a thousand who has been used to rough diamonds would believe it was in the same condition as mother nature left it, so near does it approach to a modern *cut* gem! But there are features in it that nature made no attempt to hide—although she certainly emulated the artificial finish to wondrous perfection—and they are the triangular depressions so characteristic of diamonds, and which you, Mr. Editor, I believe, consider to be "the result of struggling on the part of the octahedron to put on faces of the cube." But upon the table there are also depressions, and this time they are not triangular, but square, or nearly so, which certainly puzzles me and everyone else that has seen them. If they are the result of strugglings to put on cubic faces, how was it that they occurred on a face that was already a cubic face? As the stone has been sent to London you may possibly see it, and many out here would be pleased to hear your opinion of it.

Transatlantic Jottings.

(From Our New York Correspondent.)

THE silver question still remains open, and, according to many, it is likely to, until there is a greater change of opinion. Great dissatisfaction exists in some quarters at the fate of the bill.

* * *

A CURIOUS case was recently decided in the United States, as to whether a watch was, in reality, an article of jewelry; but as there is a licence required for the sale of the latter, the Judge decided it was, and accordingly fined a man 10 dols. and costs for selling a watch without a jewelry licence. The case will be carried to a higher court.

* * *

IT would no doubt seem a curious custom to you on the Eastern side of the Atlantic to have your income published, yet such is done in connection with taxation. Thus the Waterbury Watch Company pay on 240,000 dols., the Waterbury Clock Company on 100,000 dols.

* * *

I HEAR that some amount of dissatisfaction has been expressed by the employees of the American Waltham Watch Company at the large per centage of female labor they employ; but President Fitch says:—"It is not a question of employing more women than men, but a question of tools. The watch industry of to-day in this country is built on tools rather than hand work. Watches are made by hand in Europe, and in order to compete with the foreign manufacturers we have to depend considerably upon machinery and such improvements as we can perfect. The machinery introduced lately is of that character which needs only to be fed, and it will do the work. No particular skill is required, and a girl can do the feeding as well as a man. The number of women employed by us is 1,551, and the number of men about 1,308, not including clerks. Our pay roll is from 150,000 dols. to 160,000 dols. per month, and the pay of the individuals, men and women, is better than can be obtained elsewhere. Not more than forty men left the employ of the company last year because of newly added machinery, although about as many were given different work. We employ as many men to-day as we did a year ago, but the percentage of girls has increased. We do not anticipate disastrous consequences from the present movement, because at the meeting recently held but about thirty of our men were present."

* * *

GEORGE F. KUNZ, our great American expert, has been elected to a post in connection with the South African Exposition in Kimberley.

Round the Watch Factories.

Sixty more hands will bring up the roll of the American Watch Company to 3,000

The Waterbury have a new low-priced watch they are bringing out; it is in hunting silver cases.

Great strides are being made with automatic machines. At the American Waltham factory they are still on the increase.

The Elgin have recently set up a new automatic pointing machine in the escapement department, which cuts off the blanks and points both ends.

The American Waltham Watch Company have declared a dividend at the rate of 8 per cent. per annum. on its 3,000,000 dols. stock.

The Eaton Dial Manufacturing Company of New York was lately incorporated with 7,000 dols. capital.

It is reported from Ohio that Sir Arthur Linton, Samuel Drieiff and Stanley Drieiff of London, England, have arrived in that city to inspect available sites for the erection of a factory for the manufacture of optical goods. The visitors are said to represent an English company (?—Ed.), but its name has not been divulged. If the company decides to locate there, it will employ 200 operatives, and will bring them from England.

The Newell Watch Company, with 200,000 dols. capital, are looking for a site.

The Cheshire Watch Company's assets have been sold for 50,000 dols., one-third of the original cost.

The American Waltham Watch Company have reduced the prices of all their watches from 10 to 20 per cent., except the two highest grades.

The Elgin and other manufacturers of the Association have also made similar reductions; rebates are to be allowed if claimed within fifteen days. It is rather annoying to many that some intimation was not given of this, as they have got out their spring catalogues.

The Waltham have put a new 6-size movement eleven jewels watch upon the market, and one of similar construction in 16-size.

The Elgin have put a similar 16-size upon the market.

The United States Watch Factory are running full time again.

Trials at the Royal Observatory, Greenwich.

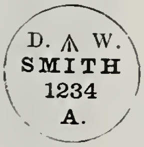
THE annual trial of chronometers at the Royal Observatory, Greenwich, will commence this year on July, 2nd, and will be for a period of twenty-nine weeks. The chronometers will be tested in the oven for two periods of four weeks each, at temperatures ranging from 75° to 100° Fahrenheit, and also at the ordinary summer and winter temperatures of the room. Applications for permission to send chronometers for trial must be made to the Hydrographer of the Navy, Admiralty, London, S.W., not later than June 13th, and none can be received at the Royal Observatory later than June 27th.

There will be also a trial of Deck Watches in two classes, A and B. Class A watches should be of good finish, full jewelled, with sunk seconds dial, and fine Breguet spring, and well-adjusted in compensation and positions. Class B watches should be strongly made, of less expensive workmanship, and adjusted for compensation and horizontal and vertical positions. They should be of about No. 20 size, with large seconds dial distinctly divided. The hour and minute hands and the hour figures should not be so heavy as to interfere with the visibility of the seconds. Preference will be given to keyless watches. Makers who may desire to send watches to this trial must first obtain permission from the Hydrographer of the Navy, to whom all requests must be sent not later than October 3rd, stating the class for which each watch is to be entered. The watches are to be delivered between the hours of 10 and 1 on any day (excepting Sunday) during the week ending October 17th, after which date no watch can under any circumstances be received.

The rating this year commences on Saturday, October 22nd, and will be as follows :—

	Class A.	Class B.
Watch Horizontal, dial up, in room for	6 weeks	6 weeks
,, ,, ,, in oven for	1 week	1 week
,, Vertical, pendant up ,,	4 days	1 week
,, ,, ,, right ,,	3 days	Not tried with pendant right or left.
,, ,, ,, left ,,	3 days	
,, ,, ,, up ,,	4 days	
,, Horizontal, dial up ,,	1 week	1 week
,, ,, ,, in room for	6 weeks	6 weeks
Total duration of Trial	16 weeks	15 weeks

The mean temperature in the oven will be from 80° to 85° Fahrenheit. The watches are to be in strong silver dome cases, with crystal glass, and each must bear a distinguishing No. engraved on the plate of the movement. After the termination of the trial the Admiralty will offer to purchase as many of the best watches in each class as may seem desirable, at prices regulated by the performance and quality of the watch, but *not exceeding* £18 for Class A, and £10 for Class B. The price is to include a mahogany box with ivory label, cleaning after trial, and engraving the Government mark on the dial and plate of the movement, and the name of the maker, the No. of the watch, the letters D. W., the Government mark, and the letter A or B on the ivory label of the box, in the manner indicated below :—



The "Arcas" Electro-plating.

IF there is one important fact that must be apparent more than another to every business man visiting the Electrical Exhibition at the Crystal Palace, it is this—that with the ever-increasing adoption of electric lighting, a greater demand arises for superior fittings every day. Lacquered bronze and fine cut glass are extremely useful for these purposes, and lend themselves to thousands of ideas. But there are many instances where neither of these materials is rich enough. There are numberless instances where silver alone is the correct thing to employ. But then comes the question of expense. Even ordinary silver-plating is too expensive ; and besides, even if it were employed, in the foul gas of, say, a London atmosphere, it soon blackens, and requires keeping clean. Hence we have had introduced from time to time all sorts of lacquers for the protection of silver surfaces from atmospheric action, but so far these have been more or less open to objection. The most successful rival of silver-plating, however, is perhaps nickel-plating, which is not nearly so much affected by the atmosphere as silver, and can be more roughly used, because of the hardness of the deposit. But even this is open to great objections : firstly, it is very difficult to clean ; secondly, it is so blue that it can never be mistaken for the sterling metal, and we might also add that there is one fatal mistake often made in nickel-plating, and that is that the surfaces are not properly prepared ; under the idea that a thick deposit of nickel will fill up all irregularities, they are left in anything but a well-finished condition. Of course, a more fatal error than this could not exist, as an electro deposit does not fill up holes, but reproduces them, so that when the nickel-plated article comes from the bath it requires so much polishing that all the sharp edges are taken off, and it looks far from new.

Some twelve months ago we saw some yacht fittings which appeared to solve the whole difficulty in the introduction of electro-plated fittings. From the absence of blue we were certain they were not nickel, and from the absence also of discoloration we could not think they were ordinary silver. Upon inquiries we found they were the production of a firm who did not appear to be pushing themselves very forward, and so we decided to wait and see how their productions stood the test of time. They have more than satisfied our expectations. These productions were the property of the London Metallurgical Company, Turnmill Street, E.C., who are now exhibiting at the Electrical Exhibition. The process is protected by patents in this and other countries. In passing through their works one sees nothing very different from an ordinary silver-plater's, except one or two little inventions such as an electro-magnetic stirring arrangement. We should advise all our readers who visit the Palace to see the specimens of their productions. They include all sorts of fittings, mirrors, mouldings, articles for the writing, toilet, and dinner table. Users should guard against the great evil of which we have already spoken. We notice the company to which we have just referred gives special attention to surfaces before electro-plating. What the plating material is which they use, they are not at present prepared to say, but we believe silver enters largely into it, while it has advantages over every other kind of plating in being much harder, and in being of a similar color to silver. It is also far less subject to tarnish, and is easily cleaned.

*

MR. J. DAVIDSON, of High Street, Wick, has made further improvements upon his automatic memorandum clock, described in January last, it now being worked by electricity.

THE Waltham are running nearly 5,000 electric lights through their extensive buildings.

Telegraph Address—SYDENHAM, BIRMINGHAM. Telephone Address—4,059.

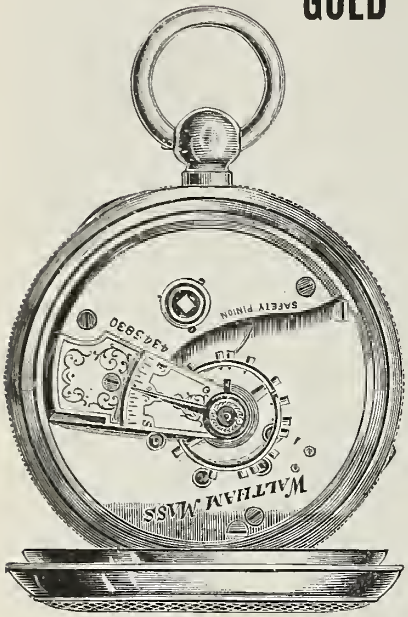
A. SYDENHAM,

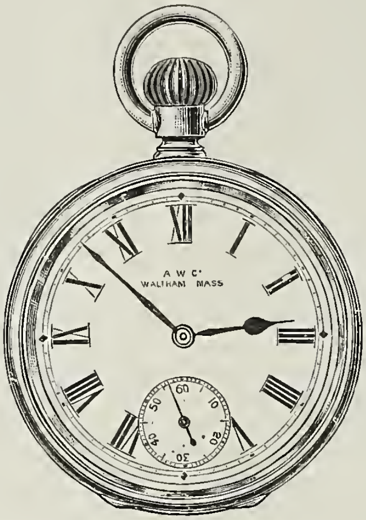
Wholesale & Manufacturing Jeweller,
26, Frederick St., **BIRMINGHAM,**
ENGLAND.

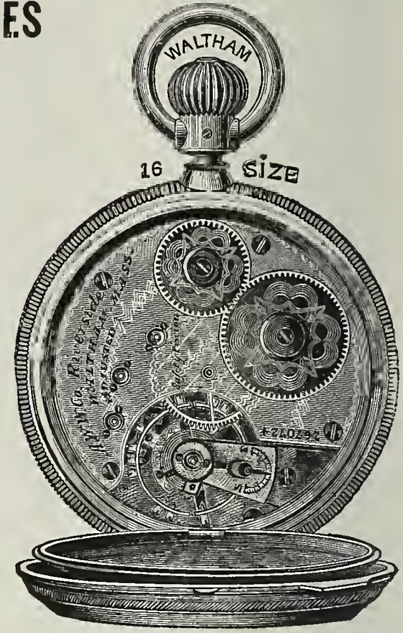
For Home and Export.

GOLD AND SILVER WALTHAM WATCHES

OF EVERY DESCRIPTION.







A Large Stock of these Splendid Watches to suit all Districts.

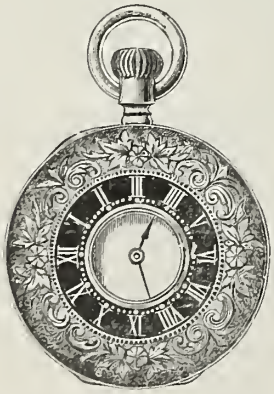
(ALL WATCHES HAVE COMPENSATION BALANCES, AND HAVE CRYSTAL GLASSES, AND, IN MOST CASES, BREQUET SPRINGS.)

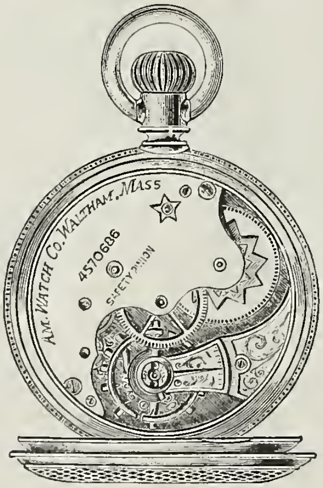
Gentlemen's Watches.	Key-winding	Keyless	Hunter
Silver Open Face Snap Cases, *from*	£1 12 9	—	—
Silver Open Face Spring Cases, *from*	1 13 9	—	—
Silver Hunters, *from*	—	—	2 0 6
Gold 10 carat Open Face, *from*	4 13 0	—	—
Gold 10 carat Hunters, *from*	—	—	5 17 0
Gold 10 carat Open Face, Keyless, *from*	—	5 8 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	6 10 0
Gold 18 carat Open Face, *from*	8 2 0	—	—
Gold 18 carat Hunters, *from*	—	—	10 8 0
Gold 18 carat Keyless, Open Face, *from*	—	9 17 0	—
Gold 18 carat Keyless Hunters, *from*	—	—	12 0 0

Ladies' Watches.	Key-winding	Keyless	Hunter
Silver Open Face, *from*	£1 18 9	—	—
Silver Hunters, *from*	—	—	2 1 6
Gold 10 carat Open Face, *from*	3 8 0	—	—
Gold 10 carat Hunters, *from*	—	—	4 6 0
Gold 10 carat Open Face, Keyless, *from*	—	4 2 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	5 0 0
Gold 18 carat Open Face, *from*	5 19 0	—	—
Gold 18 carat Hunters, *from*	—	—	7 2 0
Gold 18 carat Keyless, Open Face, *from*	—	6 8 0	—
Gold 18 carat Keyless Hunters, *from*	—	—	7 12 0

GOLD AND SILVER WALTHAM WATCHES OF ALL THE BEST SELLING GRADES IN STOCK.

WALTHAM WATCHES FOR LADIES, Hunter, Half-Hunter, Open Face, Keyless, Plain, Engraved, Fancy and Enamelled Cases, 18-ct. and 10-ct., Gold guaranteed, and Hall-marked Silver.

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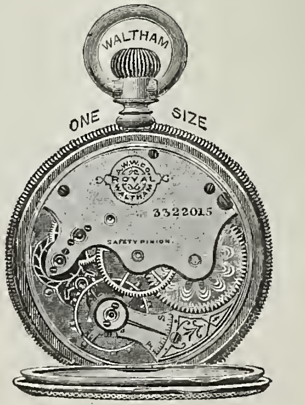

A. SYDENHAM, Wholesale Jeweller, 26, Frederick Street, BIRMINGHAM, ENGLAND.

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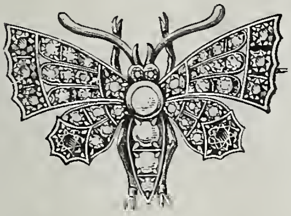
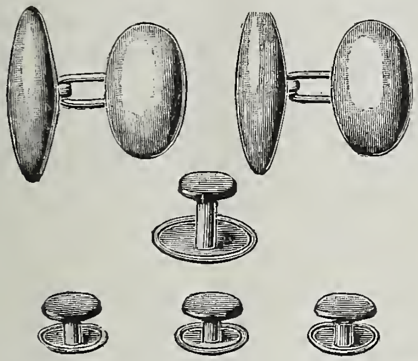
For Home and Export.

SYDENHAM'S DIAMOND and GEM SET BROOCHES.

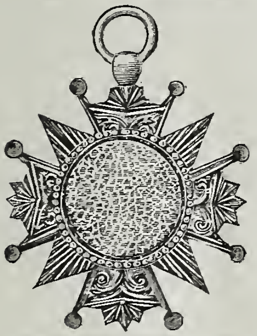


These diamond and gem set Gold Butterfly Brooches are the prettiest things ever made. Pearl bodies as sketch, 75/- each. Can be used as brooch or hair ornament.



18-ct., 15-ct., 9-ct., and Silver Link Suites, Studs and Collars of every description.

A. SYDENHAM for MEDALS



For Athletic Sports, Skating, Yachting, Boating, Curling, Golfing, Swimming, Shooting, &c.

Agricultural Shows. Root, Bird, Dog, Rabbit, Horse, Bee, Pigeon, Canary, Poultry Shows, &c.

DRAWINGS and PRICES

On Application.

BRACELETS AND BANGLES

Of every description, from the cheapest to the most expensive.

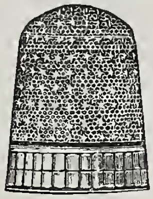
Bright Gold Bracelets, from 8/6 upwards.

Bright Gold Bangles, from 6/6 upwards.

Bracelets in Silver, narrow, Hall-marked, 3/- each.

Bangles in Silver at all prices.

Indian Bangles, -/8, 1/-, 1/3, 1/6, 1/9, 2/- each.

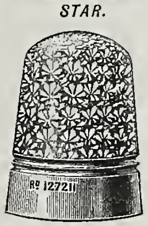


STAR.

This is the great house for

GOLD AND SILVER THIMBLES.

Silver Hall-marked Thimbles, 7/6 to 18/- per dozen.



DAISY.

The New Dorcas Thimbles,

same as drawing, and other pretty designs, 21/- per dozen.

Plain Pattern, 17/- per dozen.

DIAMOND GOODS of every description.

Ladies' Diamond Rings, £1 to £20.

Gentlemen's Diamond Rings, £5 to £40.

Diamond Fichu Brooches.

Diamond Spray Brooches.

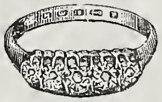
DIAMOND PINS from the cheapest to the most expensive.

Keepers—18-Carat—To those of my friends at home and in the Colonies who have not yet seen my splendid selection of 18-ct. Keepers, I ask them to take an early opportunity of buying samples of these choice goods at the most reasonable prices.

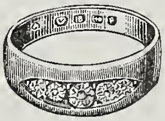
Keepers—9-Carat—The finest stock of 9-ct. Keepers in the Trade.

RINGS MY GREAT SPECIALITY.

LADIES' RINGS of the most choice description. I have one of the largest and best selections of Ladies' Gem Rings and Engagement Rings in the trade. Over 5,000 to choose from.



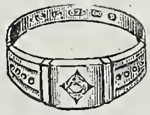
Ladies' Half-Hoop Gem Rings—All Diamond, 30/- to £50; Diamond and Ruby, 25/- to £50



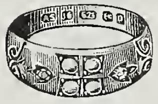
Ladies' Boat Set. Diamond Rings at all prices.

Ladies' Diamond and Gem Set Rings

of every other description, 15/- to £25.



Ladies' 15-ct. Engagement Rings, same as drawing, and other pretty designs; sell very well. Real Diamond. 12/6 each.



Ladies' 15-ct. Ruby and Pearl Gem Rings, like drawing, and various other most saleable patterns. 12/6 each.

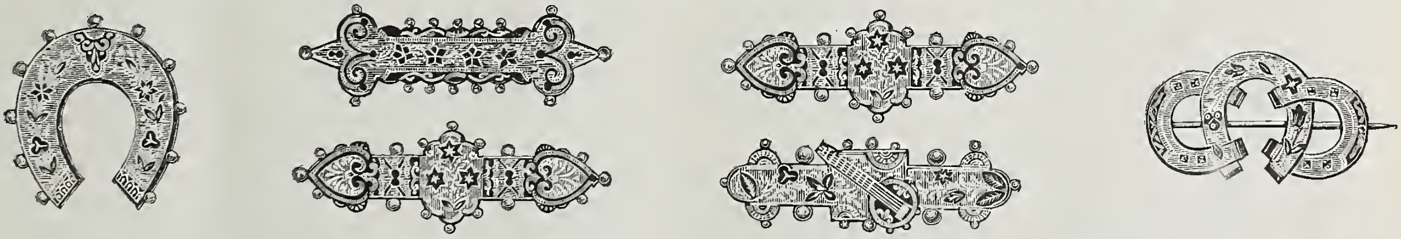
Gentlemen's Diamond Rings

at all prices.

Gentlemen's 18-ct., 15-ct., and 9-ct. Signet Rings in great variety.

Special attention given to orders for **MASONIC JEWELS, SPECIAL PIECES, PRESENTATION KEYS, PRESENTATION JEWELLERY,** and **OFFICIAL JEWELS** of all kinds.

NEWEST DESIGNS OF 9-CT. HALL-MARKED BROOCHES.



Special Line of 9-ct. Hall-Marked Brooches, various patterns, as drawings, and other pretty designs, all at 5/9 each.

These Brooches with Earrings to match, 8/9 per set.

SIMILAR BROOCHES, but larger size, 9-ct. Hall-Marked ... ... 8/3 each.

,, ,, ,, with Earrings to match ... ... 11/3 per set.

A large variety of all the most fashionable and best value patterns in 9-ct. Gold Brooches always in stock.

A. SYDENHAM

gives special attention to all Colonial Letters, and will be pleased to receive Orders, if accompanied with Cash or satisfactory English References.

26, Frederick Street,
BIRMINGHAM,
ENGLAND.

ILLUSTRATED PRICE LISTS ON APPLICATION.

Country Notes.

THE gloom has passed, the worst is over, and from John o' Groats house to Lands End reports are certainly of a more cheerful character, and so they had need be. Many were the applications from various parts of the country during the last fortnight of January and the whole of February for extension of time, but with March it became evident that the worst was over; and during the last month things have been really looking up all round, so that trade is fully up to the normal, and in many instances even better than last year. It is very strange, but all the more pleasing, how universal this improvement appears.

THE watch trade in Coventry is in a very fair state; there is an entire absence of rush it is true, but there is a still greater absence of idleness, which we hear is a very different state from that in which the Swiss find themselves. Hasty generalisations and sweeping assertions ought always to be received with a caution which generally does not accompany them; so that we do not attempt to repeat the language which we have seen used in several papers to express the low condition of the Swiss trade at the present moment, as we hope it is exaggerated; if not, we have indeed got a great deal for which to be thankful.

MESSRS. NEWSOME and Co. propose to attempt to make every jeweler throughout the Kingdom an agent for their celebrated cycles. Already many jewelers in various parts have taken up agencies for cycles, and have found it worth their while to do so.

IN many parts in the North trade appears in sympathy with the coal crisis. There are still conflicting statements as to the state of trade.

IN many centres photographic instruments are moving very well, and manufacturers are fairly busy. Each year shows an increase of sons of the camera, and it would pay many manufacturers to indulge in this art as a pastime, and amuse themselves by practising upon their novelties that they bring out. There are several firms who do this, and can send to their customers a photo of their latest arrivals without having to wait for the engraver, or spend several pounds upon it. Besides, it does for future reference if need be. Others use the camera for all their specialities and things they will never make again, and find them far more handy than plasters. A retail customer can appreciate the appearance of an article from a photo, to whom a casting would appear nothing. Albums formed of collections of this sort of things can be made and lent when required to retailers. Most of the large houses have their important works of every description photographed and classified into albums, by which they can impress customers, and take orders.

WE hear that the Merchandise Marks Act is not yet sufficiently enforced to prevent English optical goods being copied abroad and sold as English. It is a great shame if this is so, and some very bad cases are reported of removing the marks of foreign indication, and the articles being sold as English manufacture. The sooner the authorities make an example of one of these rogues the better for the trade of the country.

*

MESSRS. POTTS, of Leeds, have recently erected a three-dial chiming public clock at South Stockton, of which the inhabitants are speaking very highly.

Sir John Bennett, Limited.

THE third annual general meeting took place at Kennan's Hotel. Mr. H. W. Lofthouse, who presided, said that the increase in the business, although not so large as had been anticipated, was by no means unsatisfactory, considering that the past year had been a very unfortunate one for the jewelry trade. The profit shown on the balance-sheet stood at £2,183, from which had to be deducted 20 per cent. for alterations and initiatory expenses, and £600 debited to profit and loss on account of the annuity paid this year to Sir John Bennett. There was then a balance of £1,040, which, added to the unappropriated profit of £373, left a balance to the credit of profit and loss of £1,413. This they recommended to be carried forward. A resolution had been passed by the shareholders at the last meeting that the assets as shown in the balance-sheets were more than was necessary for carrying on the business, and a scheme for the reduction of the capital was proposed. That scheme had had their serious consideration, and they had given the solicitors instructions to take the necessary steps to give effect to the recommendation. He hoped in the course of a few weeks again to call the shareholders for the purpose of passing such formal resolutions as were necessary to accomplish their object. He moved the adoption of the report and balance-sheet. The motion was seconded by Mr. G. Hendry, and carried unanimously. Mr. P. C. Brachi and Mr. H. W. Lofthouse were re-elected directors.

The Mayoral Chain and Badge for Carmarthen.

A VERY elaborate gold chain and badge has been provided for the ancient and distinguished borough of Carmarthen. It is in 18-carat quality gold, hall-marked throughout, and the chain is particularly interesting. There are a series of principal links of a Gothic character, suiting the antiquities of the borough, the centres having Knight Templar shields with castellated crowns, which are also emblems of the mayoral office. Each of the large shields is intended to take the name and year of office of the successive Mayors, the first on each side of the centre link being engraved with the name of Mr. Thomas Jenkins, the present Mayor, who has held office for the last two years. Between each of the larger links, connected by double sets of oval chain, comes the Gothic monogram, C.C.—Corporation of Carmarthen. Approaching the centre link are two civic maces charmingly wrought, and on the former is a shield with the Prince of Wales's Feathers, relating to the fact that Carmarthen was anciently and justly considered the capital of South Wales. Below the shield are the crossed leeks of Wales in saltire, enamelled, and over it, upon a seal of honor, is placed the Royal crown. From this suggestive central emblem of the chain depends the badge—a large oval surrounded by an open wrought border of Maltese crosses and fleurs-de-lis, representing the coronet of the principality of South Wales. Next comes the legend of the borough in gold letters on an enamelled ground, and within it is given a magnificent blazon of the borough arms—the famous castle of Carmarthen with river arch and three towers, two ravens upon the side towers, and an ostrich feather on each side, with the lion *passant retournant* below. The Welsh motto of the borough completes the blazon. The following inscription is given on the reverse of the badge:—"This mayoral chain and badge is the property of the Corporation of the Borough of Carmarthen, and was provided in the year 1892 by subscription amongst members of the Town Council and others, £50 being contributed by Peter Hopkins, Esq." The whole has been carried out in the finest style by Messrs. T. and J. Bragg, of Birmingham, through Messrs. Jenkins and Son, of Carmarthen.

Uniform Time Throughout a Great Railway System.

OUR esteemed contemporary the *Philadelphia Retail Jeweler* gives the following:—"The Philadelphia and Reading R. R. Company has originated and put in force an admirable device for insuring uniformity of time as registered by all clocks and watches in use throughout this system; it is simple and perfect in operation. At the Telegraph Superintendent's office at the main station, Reading, Pa., is located a set of repeating instruments, which are connected by means of a switch with all the telegraph lines of the Reading Railroad passing or terminating at Reading. This repeater is operated by one key situated alongside of a chronometer, on which an operator works all the wires simultaneously. At two minutes before 4 o'clock p.m. business on the railroad wires is suspended, the repeater is switched in and the operator begins to transmit the word 'time' at short intervals, thus calling the attention of the line offices to the fact that the time is about to be transmitted.

"At twenty seconds of 4 o'clock successive dots are made until five seconds of 4, when the circuit is held open until exactly 4 o'clock, when one dot is given; the circuit is again held open until fifteen seconds after 4, when two dots are given; circuit held open until thirty seconds after 4, when three dots are given; circuit held open until forty-five seconds after 4, when four dots are given, and circuit held open until one minute after 4, when five dots are given and circuit closed, after which the wires are restored to their normal positions and the regular business resumed. The wires on branch roads that do not centre at Reading have the time signals supplied by means of local repeaters placed in the junction offices. By this operation the correct time is transmitted to about 450 offices and stations on the Reading Railroad system, and the operators in the various offices along the line have five opportunities for setting their clocks and watches on the second, as the first dot is always transmitted on the exact second of the divisions of the minute as above named. The time as sent from Reading is taken from a chronometer which is regulated by telegraph from time signals from the time service of the United States Naval Observatory at Washington."

The Lord Mayor's Visit to Cardiff.

IT is only natural to expect that the Lord Mayor should visit his native Principality during his term of office. Accordingly arrangements have been made to give him a warm reception in July, when he visits the London of the West—Cardiff. Of course he is to be presented with the freedom of the borough, and it is also to be enclosed in a casket, the supplying of which has been the subject of a good deal of competition. All sorts of suggestions were made to secure fair play. Ultimately No. 5 was chosen by the committee and—quite by a coincidence, of course—it was one of the local jewelers. As there may be some alteration in the carrying out of the details, we leave a description of it till a future occasion.

In accordance with the decision of the German Government to adopt central Europe time on the railroads, on the 1st April all the official and semi-official clocks in the empire were altered, some being pushed forward and others being pushed back, as their latitude dictated. There was, however, one which escaped, and which could not be made to skip half-an-hour at the pleasure of the administration. It was the famous astronomical timepiece of Strasburg Cathedral. To have meddled with it would have been to ruin it, its guardians declared; and so Schwelgue's masterpiece continues to indicate the true time of "unredeemed France."

The Clock and Watchmakers' Asylum.

THE thirty-ninth annual meeting of the subscribers to the above institution was held on the 11th ult., at the Horological Institution, Northampton Square. Mr. H. M. Gaydon occupied the chair, and there was a large attendance. From the financial statement of the Committee of Management it appeared that the total amount received during the year was £1,025 4s. 11d., made up as follows, viz.:—Subscriptions, £258 7s.; grants from the Goldsmiths' and Clockmakers' Companies, £351; donations, £416 7s. 11d.,—special reference being made to the festival presided over by Sir Joseph Savory, Bart. The total expenditure during the year was £864 12s. 3d., and a sum of £417 had been invested, leaving a balance due to the treasurer of £7 1s. 5d. The committee in their report further stated that they had expended a considerable amount in repairs on the asylum in New Southgate, and had also invested a sum of £416 as a nucleus of a fund to provide another widows' house. The report was unanimously adopted on the motion of the Chairman, seconded by Mr. Spring. Two men and one woman were elected annuitants of the society, and Mr. P. Woodman was re-elected treasurer. The committee and auditors were also re-appointed. A vote of thanks to the treasurer, the committee, the auditors, and the chair brought the proceedings to a close. The successful candidates were Mr. W. Arnott, 2,898; Mr. Vokes, 2,555; Caroline Nickelson (unopposed), 1,012. The unsuccessful candidates were Messrs. Plaskett, 313; Deboo, 371; Halliday, 100; and Stansell, 281.

The Silver Trade Pension Society.

THE fifty-sixth annual general meeting of subscribers of the Silver Trade Pension Society was held at the Holborn Town Hall as we were going to press with our last issue. Mr. J. M. Garrard presided. The report and balance-sheet, showing an increase of the society's capital, were adopted. Discussion took place on the system of using voting-papers known as "coalescing," and the chairman was asked to rule that such a method of using proxies was irregular. Mr. Slater argued on the other side, and Mr. Garrard then stated that the practice complained of was perfectly in order, a decision which evidently met with the approval of the majority present. Mr. J. M. Garrard, Mr. James Slater, and Mr. Henry Pearson were re-elected president, treasurer, and honorary secretary respectively. In response to a vote of thanks the president, Mr. Garrard, stated that he was arranging for a festival at an early date, which he hoped would result in a considerable addition to the charity's funded capital.

The Clockmakers' Company.

THE Court and Livery of this Honorable Company, together with their friends, dined together on the 4th ult. at the Albion. The Master (Mr. D. Clarke), presided. The toasts and speeches were certainly above average, special contrasts being drawn between the work of the corporation and other august bodies. But permeating all there seemed to be an undercurrent of the realization that the corporation was on no firmer basis than that upon which other civic and national institutions have been founded in the past, amongst which it may some day be numbered. There was a goodly representation of the trade, both amongst the liverymen and their friends, and it is very rarely, perhaps, at a company's dinner of this sort, that a craft, whose name is borne by a company, is so well represented; and we feel sure that if the Honorable Clockmakers' Company was as rich as many of the others, it would do considerably more to justify its name than many are doing at the present.

The Markets.

The following shows the imports of watches into this country:—

March, '92, £74,468; March, '91, £65,366; first three months of year '92, £180,919; '91, £148,405.

The value of clocks imported is as follows:—

	March, '92	March, '91	3 Mths., '92	3 Mths., '91
France	£12,572	£15,322	£32,382	£40,102
United States	£8,239	£11,762	£23,113	£25,895
Totals	£44,727	£51,506	£108,219	£125,973

DIAMONDS.

London, April 27th.—The state of trade during the month, although a slight improvement in some respects upon last, is still very depressed. Owing to the action of the De Beers Company, either intentionally or by a mistake, a lot of goods were placed upon the market, which materially influenced prices. The Easter buyers were very disappointing; but there are hopes and indications of more activity.

Amsterdam, April 25th.—During the past month the diamond trade in Amsterdam has been almost languishing, the demands being very limited indeed, and sales only effected at tempting prices. There was an insignificant demand in the beginning of the month for small stones, and towards the latter larger stuff was in a little request. The slackness at this time is attributable to the fall off in the South American trade and the destruction of the Russian trade, consequent upon the expulsion from that kingdom of the principal speculators — the Jews. In Antwerp much the same state exists. Mills are only partially employed.

Paris, April 24th.—There has been but little or no improvement in the diamond trade during the past month. Easter was remarkable for its absence of foreign buyers. Notices, however, have been received from American and other houses that their representatives will shortly be over for the purposes of buying for spring and summer stocks. The recent diamond failures chiefly fell upon bankers.

MOTHER-O'-PEARL.

The April quarterly sale of the above article was not very well attended, and a great number of shells were withdrawn. Australian were firmer, medium and chicken being up 20s. Sydney, Pile 1, realised from £9 to £10 7s. 6d.; medium, £9 5s. to £10; chicken, £9 10s. to £10; broken, £6 5s. to £6 17s. 6d.; grubby, £4 7s. 6d. to £6 7s. 6d.; dead, £1 15s. to £4 15s. West Australian, Pile 1, £6 to £7 15s.; medium, £8 15s. to £10 2s. 6d.; broken, £5 10s. to £6 10s.; grubby, £3 17s. 6d. to £5 10s.; dead, £1 2s. to £2 12s. 6d. Manila pieces, £5 10s. to £6; chicken, £5 7s. 6d. to £6 5s.; grubby, £4 to £4 7s. 6d. Macassar, £7 17s. 6d. to £8 2s. 6d.; chicken, £6 7s. 6d. to £6 17s. 6d. Penang, £7 10s. to £7 15s.; medium, £7 to £8 10s.; pieces, £5 10s. to £6 10s.; grubby, £3 10s. to £4. The next sale is fixed for June 21st.

SILVER.

Economists, statisticians, and manufacturers will soon have to ask themselves the question afresh as to what determines the value of silver. When the precious metal touched 40d. it was considered by many to be a non-recurring phenomenon, but the prices to which it has fallen during the last month are below the limit set even by the most extravagant prophets. There is no doubt the American Silver Legislation is responsible for much of the up and down movement, from the decree to buy up 54,000,000 ozs. per annum, down to the recent defeat of the Coinage Bill, with which the decline somewhat coincided. But even then we hear of the influence upon its price by the rate of Indian exchange. No doubt the first act referred to, of buying annually 54,000,000 ozs. per annum, stimulated many mine-owners to open up their mines again with the hope of realizing at a profit. But the old law of supply and demand must never be lost sight of. It is not reasonable to suppose that even with political intricacies, those marvellous productions of the Broken Hill should go on long without influencing the market materially. It will be an incalculable blessing, not only to India but to other countries also, when we get a solution of this question. The prices quoted now are below 39d.

TIN.

Tin has been improving and remaining firm at £90 17s. 6d., but rose to £94 2s. 6d. at about which price it is booked for three months.

COPPER.

The slight activity of the close of last month soon eased to £45 7s. 6d.; it then became somewhat steady at £45 17s. 6d., at which it is now booked for three months.

SPELTER.

Spelter has been fairly quiet with an upward tendency to £21 17s. 6d.

QUICKSILVER.

Quicksilver, which commenced rather high, owing to the quiet, fell, becoming dull, and subsequently easing to £6 15s.

Ceylon Pearl Fisheries.

THE year 1891 was one of the most important fisheries on record, no less than 44,400,000 "oysters" being brought to land during the forty-three days the fishery lasted. These when brought to shore are shot into three heaps; two of the heaps are passed over into the hands of the Government agent, who with a marine inspector attends and controls the fisheries. The "oysters" are subsequently offered for sale, unopened, by public auction at per thousand. The probability is there is not a parallel in the whole world to the springing up of a town, and still more quickly disappearing, than that which springs up upon these shores during this season. Scarcely a tribe—certainly not a country—in the Eastern hemisphere is not represented. Each buyer superintends the washing of his own "oysters," with the result that many have to stand and see their little fortune lost or one made, and return penniless or "a rich merchant." It does not take much to constitute the latter in India. The Government netted from this fishery 963,779 rupees. The average price realised was £3 5s. 3d. per thousand, while in 1880 it was only 15s. 4d. They have been known to realise £12 7s. 10d. per thousand. The fishing is very irregular, and sometimes for twelve or sixteen years there are none. Unfortunately there are evidences that there will be no more for some years to come.

Referring to our remarks in the last issue of this journal *re* the purchase of the business of Henry Wilkinson and Co., the oldest existing company in Sheffield, and whose trade-mark dates back 108 years, having been endorsed by the Cutlers' Company, we now learn that the firm of Henry Wilkinson and Co., Limited, will in future be kept a distinct concern, under the style of Henry Wilkinson and Co., with their ancient mark (the cross keys), and that some of the proprietors of the firm—men of experience in the electro-plate trade—will endeavour to forward the interests of the new concern.

We hear that the 400 carat diamond referred to by our Kimberley correspondent is now being cut in Antwerp by Messrs. Coltermans-Henrichs, the present owners of the stone.

The Artistic Treatment of Jewel and Address-Caskets.

By J. WILLIAM TONKS.

A Paper read before the Society of Arts, February 23rd, 1892.

(*Continued from page* 185.)

It might also have been thought that as a casket, the dower of a woman, was the source of such mischief it would have been a discarded object. But this was not so. The joy-loving Greek might laugh at the early perils of the jewel-box, the witty poet might fable in veiled satire the dangers of the female love of ornament, but the casket, nevertheless, grew richer and more decorative age by age. The wooden box was overlaid with ivory, silver, and, at last, gold, with gems and other costly materials, treated generally with panels and in conventional style, as seen on the later Greek vases. During the Roman period, as riches and luxury increased, these naturally became more elaborate. Dress and ornaments with many became the chief object of attention, until a lady's toilet and ornaments became known as *mundus muliebris*, her world.[*] There came into use a special case, formed of some rich material called *Dactylotheca*, wherein a large array of rings were kept.[†]

It is a matter of interest that one of the first gold caskets of which we have a record has relation to a remarkable Roman custom, in which—contrary to the Greek legends—the sterner sex were concerned. It was a habit to allow the beard to grow until about the age of twenty-one. The young man then began to shave, and the first crop of beard was consecrated to some god. The day was held as a festival, and presents were sent to the young shaver by his friends.[‡] Thus, the young Nero, whose early reign was as promising as its end was infamous, consecrated his beard to Jupiter Capitolinus, enclosing it in a veritable golden casket *(pyxide aurea)*, the borders being set with pearls.[§] The melancholy fact is in regard to all these examples, doubtless exhibiting in a high degree the art, as well as the luxury, of each successive period, that nothing now remains to us but an accidental record. This was, indeed, hardly to be expected in regard to the Roman world. As Byron powerfully expresses it :—

> The Goth, the Christian, time, war, flood, and fire
> Have dealt upon the seven-hilled city's pride ;
> She saw her glories, star by star, expire,
> And up the steep barbarian monarchs ride,
> Where the car climbed the capitol.[||]

By the burning of the Alexandrian library, even the record of these pieces is mainly lost. There were, indeed, general causes, which have operated through long ages, and have prevented our being able to refer to examples of these far-off times. The very richness of the material has occasioned the loss of many artistic treasures; the cupidity, the necessity, the repeated disorders of so long a course of centuries have ensured their destruction; while fashion, that goddess of change, whose destructive worship belongs to every age, as M. Labarte remarks,[¶] has contributed even more than these combined causes to the breaking up of the finest specimens of the goldsmiths' art. It is only, therefore, by the examples left us, in materials which it would hardly pay to disfigure or destroy, that we can pursue the historical aspect of our subject.

It seems a far cry from the gold casket containing the beard of Nero, to those enclosing mementoes of martyrs of the Christian Church, but such is the irony of historic fate. The custom arose, even in the early times of Christianity, to take out of the catacombs memorials and even portions of the remains of martyrs and other saints, to enclose them in boxes or other ornaments, and to wear them as amulets. Such small holders were generally worn on the breast, from which they receive their name "encolpia." They were mostly small rectangular caskets of precious metals or of common materials, ornamented with the emblems of the Saviour or with Biblical illustrations. Two golden encolpia of this kind were found, in the 16th century, in the grottos of the Vatican. The simplest holders of such relics are the numerously-occurring caskets and round boxes of ivory, adorned with ornaments or with reliefs, also caskets of fine kinds of wood, or such as are covered with embroidery and enamels. Perhaps the most valuable—at any rate, the most significantly artistic work of this kind—is an antique onyx vessel, with a relief picture in the style of Greek art, in the treasury of the Abbey Church of St. Maurice in Wallis, and which, according to tradition, was a present of Charlemagne.

Here let me say a word in reference to our National Art Museum. I have had the advantage of seeing most of the collections in Europe, north of the Alps, and am free to say that, as a typical collection of caskets, coffers, and marriage chests or *casoni*, the South Kensington examples stand first. I do not refer to what are called cabinets, in which, so far as value and variety are concerned, the Green Vaults at Dresden must carry off the palm. But I am forced to agree here also with M. Labarte, in his opinion that many of these pseudo-architectural productions are, after all, but elaborate artistic follies. For art, value, and guidance, I think we have reason to be satisfied with our own national collection ; and I am happy to be able to refer to some of them, which have been kindly lent for the occasion.

One of the most interesting examples is an ivory carved box (10-66), with silver frame and mountings of decided Byzantine character, believed, with good reason, to be the work of the 10th or 11th century. It is oblong in form, with feet, and a lid resembling a penthouse roof in character, and following the Mosaic proportion generally, 2½ by 1½ by 1½. The surface is in bas-relief, almost flat, but the ground is cut down very deeply ; thus giving an effect of unusual boldness and force.

The only piece which came near to the nature of caskets, produced about this time in Western Europe, were oblong shrines or really boxes, having pointed gabled lids similar to the roof of the ecclesiastical buildings of the period, and made to contain what were held to be the most precious treasures of the Church. These were the reputed relics of the greatest saints of old, and hence the name *chasse* was given to the smaller boxes, while the term shrine was retained for the larger ones. One of the earliest and finest of these is the "Shrine of the Magi," in Cologne Cathedral, which dates from the 11th century. The front is surrounded by a border of gold, decorated alternately with precious stones *en cabochon*, and enamelled ornaments in gold filigree. A series of arches decorating the sides are each cut out of a single plate of metal, decorated with *champ-levé* enamels. A very fine enamelled shrine of the 12th century, in the Soltykoff collection, with subjects representing the entombment and the resurrection, deserves mention ; while a beautiful enamelled *chasse* of the same period in the British Museum, the subjects represented being the Virgin and Child, with apostles, should be examined, as a remarkable specimen of the time.

I am fortunate in being able to show one of these religious caskets (7245-62). The shape is the usual one, with a high ridge roof, the enamels are on copper, and the figures are of the usual treatment, though it is difficult to fix the date of its execution.

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[*] Liv. xxxiv., 7.

[†] Martial xi., 60.

[‡] Juvenal iii., 187 ; Petron. 29.

[§] Suet. Ner. 12.

"Childe Harold," c. 4, lxxx.

[¶] Arts of the Middle Ages, c. vii.

We are now approaching a time when the secular casket, as such, began to appear. The dower of a lady of the Middle Ages was often enclosed in two boxes of very different sizes. One was large, of bold and often beautiful proportions and called *cassone* in Italy, *bahut* in France, and chest in England. These contained the dresses and larger valuables of the lady's wardrobe. The smaller box, called *coffret* in France, and casket in England, held her jewels, money, and treasures, which lay in small compass. This is illustrated in the words of Shakespeare, "I have writ my letters, casketed my treasure, and given orders for our horses." These caskets were often of wood or ivory, charmingly carved, of wood covered with gold, silver, or brass; wood with decorated leather, at times silver and gold, lastly, of iron or steel.

A carved oblong box of maple wood (1167-64), with severe Gothic arches and panels, boldly cut, marks a transition period. It is said to be German work, probably of the 14th century, and is so ecclesiastical in spirit that it is difficult to say if it was originally a lady's casket, or an *armoire*, a name given in France to treasure boxes of the Church. Another casket (176-66), with panels of bone of shape well-defined and boldy divided, is carved with events from the life of the Virgin, also Gothic in panels and arches, but the style is more free, and the box is more clearly intended for a lady's jewels. The date is about the 15th century. Another casket, Italian, of the same date, is one of the treasures of South Kensington Museum. It was purchased from the Castellani collection at a cost of some £500, is of silver, parcel gilt, with sloping lid, oblong in general form, with four small feet; its chief glories being a series of quatrefoil plaques in translucent enamels, upon figure groups embossed in low relief, and the details afterwards engraved after the method described by Cellini.[*] The subjects are scenes in the life of the Saviour, of the Virgin Mary and Saints. These enamels, which give so much value to this piece, have lately been reproduced as to their essential character by Falize, of Paris.

Let us now turn to another type of box, less ambitious and costly, but, withal, marked with much feeling and style. It is of wood, covered with leather (898-1877), *cuir bouilli*, is oblong in shape, enriched with incised patterns in low relief, a leading shield of arms, and Latin and Italian inscriptions; the date is given as 1490. There is also a larger coffret, leather-covered, decorated with Scripture and hunting subjects, which is interesting, and deserves examination.

There is a curious casket (2168-55), stated to be of the 14th century, but which cannot, I think, be much earlier than the period at which we have arrived. It is oblong, of wood, covered with stamped and gilt brass work, having rosettes, heads of queens, and sphinxes in alternation, showing much effect and colour, the surface being varied and rich. It is bound with twisted brass bands and clamped, so that the necessary strength is not lost sight of in the search for decorative beauty.

We now come to the iron age in caskets—the time when it was requisite to take more precautions than formerly against theft and violence. This iron age may, indeed, probably have begun at a much earlier period than the authentic examples left us would indicate. They were also used, as we learn, by nobles and knights, no less than by the fairer sex. M. Viollet le Duc informs us[†]—"During their journeys ladies carried them with them, and kept their jewelry in them. In the country, in distant expeditions, the nobles and knights, besides the trunks which contained their effects, took these caskets, which were confided to the charge of the squire, and contained money, jewels, and sometimes even title deeds; for it was no unusual thing, even up to the 13th century, to carry about with one family papers and important deeds."

While, then, the richly-carved ivory box, the jeweled and enamelled casket, were most appropriate for fixed positions in the hall or castle, the iron casket, with its strength and elaborate lock, was more suitable for travel and dangerous service. There is a typical one in South Kensington Museum, which combines strength with beauty (87-65). It is of iron, oblong, having an elaborate lock on lid, and was made in Augsburg about A.D. 1530. The form is excellent, having a raised moulding on lid to protect the lock-plate, with gilt-metal corner pieces, while the general surface is finely engraved with winged unicorns and arabesques. There are great numbers of these iron caskets, of uncertain dates, in museums. Messrs. Hardman, of Birmingham, exhibited one in 1862, of which I have an illustration. It had an arch top, with handle on lid, and appropriately decorated with rose sprays, parcel gilt. But Messrs. Chubb have probably come nearest to the mediæval idea, with their drawing-room safes opened by golden keys.

From iron we pass to bronze. There is a charming little box (2084-55), bronze gilt, arched at top, and handle as last described, with arabesque ornament in relief, and the legend of Orpheus given in panels, which leads us to less troublesome days. To show how long the strong box idea lasts, however, there is an interesting example of Dutch 18th century work (1130-1864). It has a curved lid, strong lock, hinges, framework, and angle-plates in brass open work, the panels, however, being much contrasted by being made in cane wicker plaiting.

There is also a very fine and characteristic box, English, of the 17th century (619-1890), which I should not omit to refer to. It is large, oblong, with lock and handle at top, is of wood, covered with brass *repoussé* work, roses, tulips, and trefoils, bound with iron, and studded with nails, the whole surface work being artistic and appropriate.

We will now take a step southward, and regard for a few moments the Italian marriage caskets of the Middle Ages. These caskets are of wood, ornamented with pounced patterns, and covered with most minute and beautiful subjects, figures, foliage, and ornaments in fine paste or stucco, probably the work of Francesco l'Indaco or his followers. Of these works in *gesso-duro*, South Kensington has a series, and the one I have noted is a typical example (110-1887). It is oblong, with sloping lid, the panels having raised figures, in processional groups. Gifts, music, etc., probably marriage offerings, are shown on the lid, shields of arms in positions of vantage. The *gesso-duro* is white upon blue and gilt grounds, and the legend, *Omnia vincit amor*, is shown on a painted riband on the obverse of lid. While referring to Italy, it may be well to observe that the motive of the wood casket, richly carved, gilt, painted in imitation of enamels, and of massive, oblong form, has been retained until the present day. A fine example of this is the jewel casket of the late Cardinal Antonelli, exhibited in 1862, and of which I have an illustration. It was executed by Fiorentini, of Rome; at the base are lion supports, and the four great prophets; at the angles are figures of the twelve apostles, each corner has a statuette of one of the evangelists. Allegorical figures adorn the panels, the centre one containing the cardinal's arms and insignia. The rich foliage of the cover is in open carved work, over which is a seated figure of religion on a lion-headed throne, and holding the keys of St. Peter.

(*To be concluded.*)

The Rockford Watch Company have received word from their agents in Australia that the Company has received a first award for excellence of workmanship and general merit.

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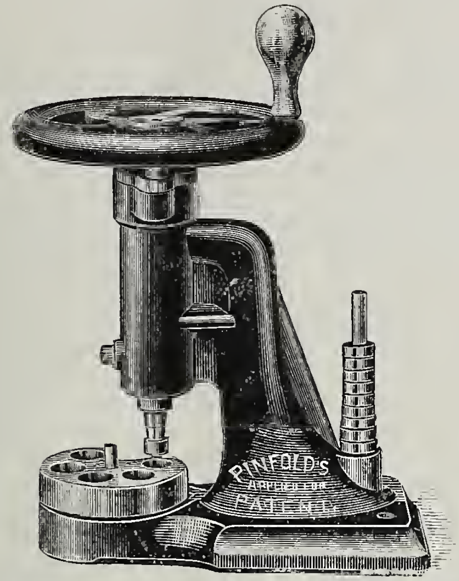
[*] "Trattato dell' Orificera." Milano, 1811, p. 45.

[†] "Dictionnaire raisonné du Mobilier Francais."

Things New and Noteworthy.

Pinfold's Ring Stretcher.

(*Patent applied for.*)



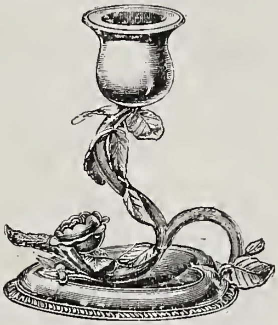
The above is an illustration of a new ring-stretcher, patented by Messrs. A. and G. Pinfold of Cleckheaton, Yorkshire. The merits of the invention only require to be brought before the members of the trade to insure for it a complete success. It would be difficult to find anyone who is satisfied with the method now employed for stretching and contracting rings. The time taken to alter a ring is often considerable, as after it has been made the correct size it invariably requires repolishing, in consequence of the scratching it is almost sure to get during the operation. In addition to the time occupied, there is frequently a great danger of the ring being knocked out of shape, and sometimes broken through the way the stretcher is driven through it; but in Pinfold's invention these disadvantages are entirely obviated. The operation can be performed in a few minutes, and may be done as expediently and correctly by the assistant in the shop as by an experienced workman; and further, the alteration may be made in the presence of the customer. This is an advantage, as many ladies are reluctant to entrust their rings out of their sight.

The inventor claims that all kinds of rings—thin, thick, narrow and broad—may be altered with equal facility, and the ring retains its shape, not being made taper, or forced out of flat, as the stretcher passes *straight through* the ring, leaving the latter perfectly free. This obviates the difficulty existing when using the old tool, of getting the ring off the stretcher. The tool is really a press, and consists of an upright iron stand, at the base of which is fixed a gun metal disc with graduated and tapered holes, similar to the old tool. This revolves on a centre pivot and is regulated by a steady pin. The iron stand is made to support a powerful screw, causing a cylinder into which it is tapped to rise or fall. This cylinder terminates at the lower end in a strong pivot split.

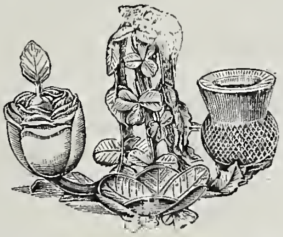
One feature of the tool is the form of the stretcher used, which is a slightly tapered disc with a hole through the centre, just large enough to fit on the above mentioned split pivot spring tight. There are a number of these discs, as shown above, upon the stud at the back. The sizes of the discs correspond exactly with the sizes on the standard ring stick. Its construction and working will at once suggest itself, as well as other uses to which it may be put. Mr. Pinfold is already known to the trade through his simple but effective metronome.

Extension of the Rage.

For a considerable time now there has been a great cry for emblematic spoons, but as these are of such small comparative value, there has risen a demand for national and local silver articles of more important character. With a view to meet this demand, Messrs. Stokes and Ireland, of Birmingham—whose productions in certain silver lines are amongst the best known in the trade—have come forward with several articles emblematical of the British nation, and in doing this they have selected those articles most in demand.



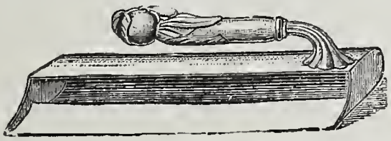
The above block shows how the emblems of the United Kingdom can be employed to form a silver candlestick, an article in great demand now for a long time. By a process of their own they are able to do some remarkably natural modelling, which fact is not brought out in the engraving, although it is very important.



The same emblems are also employed as shown above for a cruet, when, by a slight conventionalising of the national flowers, very striking and pleasing effects are obtained. We can thoroughly recommend these goods to our readers, first from our long acquaintance with the quality of the work of this firm, and secondly, because we are assured that there is a great demand for them.

New Crumb Plough.

The new (registered) "Crumb plough" or "Gatherer," illustrated below, is manufactured by Messrs. Spurrier and Co., Birmingham. It is 8in. long, fitted with a 1in. guard slanting slightly into the plough, so that when the plough is passed over the table-cloth the crumbs slip over the guard into the interior, without being able to return, and are emptied by simply turning over the plough, thus obviating the disadvantage of a spluttering brush and tray. Nor can the crumbs slip over as in the ordinary crumb scoop. These "Ploughs" are handsomely made in E. P. with ornamental handles, such as carved Japanese ivory, etc., etc. There are numerous articles of this firm's production to which allusion might be made, but the crumb plough just registered (No. 189,414) is one which is quite out of the ordinary run of things, and will meet a want long felt.



In and Out the Courts.

Real Market Overt.—Walter Harrison, employed by Messrs. Booth and Co., jewelers, Birmingham, to carry travelers' sample cases, was sentenced at the Old Bailey to twelve months' hard labor, for stealing forty-four rings, value of £80, while Mr. E. Booth was waiting upon a customer. It was found that Harrison had sold the rings, or part of them, in Petticoat Lane, which the learned Common Serjeant took care to point out was market overt, and then ordered the jewelry to be given up.

A "Christener" Run Down.—The Glasgow police have recently run to ground an old suspect, with the result of finding on his premises a portmanteau full of watches, many of which had been successfully altered in name and number till it was next to impossible to detect the alterations. He was sentenced to sixty days' imprisonment.

The Result of Living in Style.—Messrs. Hancocks and Co., of Bond Street, have lost their action for the recovery of the amount due to them for jewelry supplied to Mrs. Scholefield, when she was in the height of her glory, as it was not possible to show that she now had any estate. But the time may come, and the sooner the better, when *personal* security will have to be accepted under these conditions. The thought of ending a life in gaol might debar some of those folks from living at thousands a year beyond their income, who do so with impunity under our existing laws.

"Can the Ethiopian Change His Skin?"—The porter recently employed at the Royal Hotel, Bradford, and who stole 155 gold watches, the property of Messrs. Michael Bros., Hatton Garden, forms a caution to the benevolently disposed, as it turns out that the landlady took him into her service without any knowledge whatever of him other than meeting him at a Salvation Army shelter. It is now shown that he was a ticket-of-leave man. He has been sentenced to seven years' penal servitude, and five years' police supervision. Only about 130 of the watches have been recovered.

"Not Guilty."—The watchmakers and pawnbrokers charged at Leamington in connection with the Comber House robbery have been acquitted by the jury.

Mistaken Identity.—On the 18th March a man entered the shop of Mr. W. G. Schoof, 99, St. John's Street Road, E.C., and selected two gold watches, for which he tendered a cheque, which was subsequently dishonored. A gentleman was apprehended for the offence, whom it turned out had been a member of the Stock Exchange for thirty-eight years. Moreover, Mr. Childs, of South Kensington, who was defrauded by, presumably, the same man, was sure the accused was not the man. Mr. Burly, the accused, was therefore discharged. How careful one ought to be in cases of this kind!

Window-smashing in Town being rather quiet, a countryman tried his hand at it the other day at Wakefield.

A lock-up shop belonging to Miss Anderson in the Arcade, Harrogate, was burglarized, and a number of watches stolen therefrom. The thief, or as it is believed, two thieves, are still at large.

A man was locked up the other day in Vienna for offering a quantity of diamonds and fine rubies, as his tale that they belonged to the King of Siam, who had commissioned him to sell them, was not believed. Subsequently his story received corroboration. The jeweler is now very sorry, but the agent has had enough of Vienna and is trying Paris.

Madame Lacroix, the young widow who accompanied the Paris jeweler's son, after his theft of 860,000 francs' worth of jewelry belonging to his mother, has been sentenced to four months' imprisonment as an accomplice.

Reviews.

A History of Watches and other Timekeepers. By James Francis Kendal. London: Crosby Lockwood and Son, 1892. 2s. 6d.

The object of this book is probably to bring before the public in greater prominence the name of the firm of Kendal and Dent, and if so, we have no hesitation in prophesying a good success, as it no doubt contains more information in connection with time and timekeepers, in a *popular form*, than any other book that has appeared. There are hundreds of items and facts scattered through its pages which must not only prove interesting to the public at large, but ought to be known by every member of the trade—both workman and salesman—although we sadly fear they are not. It is lamentable how little is known by the ordinary salesman (who is the only public expositor of the horological art) of the science that underlies the craft in which he is engaged, or the history of the evolution of those marvellous pieces of mechanism in which he deals. We should therefore advise every member of the trade to procure a copy of this valuable little manual. Of course it must be pointed out that we advocate its claims upon the foregoing hypothesis, and not viewing it as a trade handbook. If we were dealing with it as the latter we should perhaps be inclined to criticise rather adversely, as much of the matter is quite irrelevant to the title, nor is the subject dealt with in either a scientific or a historic manner. The most is made of facts with which the writer is best familiar; whilst others of infinitely greater importance are not even referred to, almost every action of the firm above-named is chronicled. Names of men whose *absolute inventions* will be carried down to the end of time, inasmuch as they have been factors in the evolution of the various orders of time-measurers of to-day, are not even mentioned, although the exclusion of them forms "missing links" in the phylogeny of those mechanical marvels which to-day are regulating the actions of most of the inhabitants of the civilised world, checking the motions of the orbs of space, and revealing to man the secret operations of Nature.

Observations of the Choice of Spectacles. By Alfred Chadburn Bros., Opticians, Albion Works, Nursery Street, Sheffield.

At least since the days of "the great Exhibition" the trade and the public have been familiar with the old Sheffield firm who edit the above little guide, which as the years have rolled by has called for new editions, until the tenth is now before us. As each of them have been of 5,000 each it speaks for the popularity the work has enjoyed, containing, as it does, hints useful to all wearers and vendors of the assisters of impaired or imperfect vision.

Talking of optics reminds us of the fine catalogue issued by Messrs. F. Darton and Co., 142, St. John Street Road, E.C., so long known at No. 45, St. John Street. The new large premises have been necessitated by the remarkable increase in business which this firm has for some time been enjoying. The catalogue, too, is correspondingly enlarged, and contains descriptions of almost every description of optical instrument and accessories; it also includes many electrical and philosophical sundries, and is well illustrated.

On May 1st the American Waltham Watch Company will part with the gold-case shop in Bond Street, New York, confining its attention to movements. Messrs. Robbins and Appleton will then remove to the magnificent offices, 23, Maiden Lane.

The Gazette.

CAUTION.—*It must be distinctly understood that, in giving the Official Gazette information, we take official records as we find them, and accept no responsibility for inaccuracies, while as an almost invariable rule the facts will be found correct.*

Administration Order.

Kilham, John Henry, Jeweler and Watchmaker, 167, Great Jackson Street, Hulme, Manchester. £42 9s. 10d. Ten creditors. Mar. 24. No. 331.

Bankruptcy Record.

Blakemore, Hugh Henry, Manufacturing Jeweler, 84, Lansdowne Street, Winson Green, and 10, Tenby Street, Birmingham, and Adelaide Place, Blackpool, late 18, Westgate, Huddersfield. First Meeting: Apl. 7. Public Examination: Apl. 29.

List of Creditors—

		£	s.	d.
Newmark, M.	London	81	17	0
Appleby, A., and Co.	Birmingham	82	11	9
Backmann, E.	,,	23	12	6
Durbon and Co.	,,	21	18	4
Levetus Bros.	,,	80	0	0
Swann, —	,,	20	8	6
Trawford, T. B.	,,	24	12	0
Wall, T.	,,	27	16	7
Wright, L. J.	Manchester	156	16	9

Partly Secured Creditor.

Sandes, G. H.	Derby	84	2	1

Britton, John James, Watchmaker and Jeweler, 84, George Street, South Stockton. Adjudication: Mar. 12.

Furtwangler, Francis Adolph, Watchmaker and Jeweler, 24, Green Street, Neath. First Meeting: Apl. 1. Public Examination: Apl. 5.

Obenauf, William, Watchmaker and Jeweler, 23a, Bank Street, and in lodgings at 5, North Street, Holm Head, Carlisle. Receiving Order and Adjudication: Mar. 17. First Meeting: Apl. 4. Public Examination: Apl. 4.

Pybus, William, Watchmaker, now Pedlar, Wisbech, late 27, High Street, Wisbech. Adjudication: Mar. 22. First Meeting: Apl. 2. Public Examination: Apl. 20.

List of Creditors—

		£	s.	d.
Cohen and Son	Birmingham	120	0	0
Harris and Co.	,,	35	0	0
Nott, S. L.	,,	186	0	0
Sloane and Carter	,,	70	0	0

Williams, William Courtenay (trading as Wordley and Company), Goldsmith and Jeweler, 56, Lord Street, Liverpool, and Rushmoor, Penkett Road, Liscard. First Meeting: Apl. 7. Public Examination: Apl. 7.

List of Creditors—

		£	s.	d.
Betzemann and Sons...	London	36	10	3
Brockwell and Sons	,,	76	18	0
Ehrmann, B.	,,	80	11	6
Eady, Parrs, and Eady	,,	55	11	11
Holland, Aldwinkle, and Slater ...	,,	328	0	0
Henry, R. L.	,,	578	0	0
Harris, C. S.	,,	134	5	8
Isaac, A. and J.	,,	85	10	0
Keean, M., and Co.	,,	135	0	0
Little, James, and Co.	,,	41	16	0
Paton, A. H.	,,	214	19	3
Smith, J., and Son	,,	107	16	6
Walter, W. H.	,,	69	18	10
Barker Bros.	Birmingham	75	14	0
Blankensee and Son	,,	42	15	0
Deaken and Francis	,,	294	4	6
Harwood, Plante, and Co.	,,	52	1	2
Pembroke and Dingley	,,	46	1	0
Thomason and Nephew	,,	84	8	10
Boam, B.	Brighton	15	0	0
Fingera, —	Liverpool	155	5	0
Hardisty, Frank	,,	49	16	0
Walmsley, G. G.	,,	45	2	6
Beaugam, V.	Paris	48	5	0
Hutton, William, and Sons	Sheffield	169	12	8
Martin, Hall, and Co.	,,	59	9	9
Wilkinson, H., and Co.	,,	87	2	6

Partly Secured Creditors.

Chandley, J. E.	Crawley	2,795	0	0
Bankers' Claims		98	0	0

Preferential Creditor.

Littler, J.	Tranmere	260	0	0

Deeds of Arrangement.

Barber, Richard Gibson, Watchmaker and Jeweler, 20, Northgate, Darlington, Durham. Trustee: C. T. Appleby, 11, King William Street, Huddersfield, C.A. Dated Apl. 8; filed Apl. 11; unsecured liabilities, £355 11s.; estimated net assets, £364 4s. 6d.

List of Creditors—

		£	s.	d.
Austin and Steeley	Birmingham	39	2	0
Cohen, J., and Sons	,,	14	14	0
Mott and Co.	,,	35	0	0
Newsome and Co.	Coventry	21	2	0
Brash, Isaac	Leeds	30	0	0
Myers, Joseph	Manchester	19	0	0
Barber, Mrs.	Darlington	55	0	0

Bryant, Charles, Jeweler, 33, New Bond Street, W., and 31, Dulka Road, Battersea Rise, Middlesex. Trustee: J. C. Jackson, Vincent Road, West Green. Secured creditors, £255 15s. 10d. Dated Apl. 9; filed Apl. 14; unsecured liabilities, £1,093 10s. 6d.; estimated net assets, £326 8s.

List of Creditors—

		£	s.	d.
Hahn and Co.	London	63	0	0
Norman, A.	,,	32	13	3
Schmidt, W.	,,	132	1	2
Norman, E. S.	,,	92	0	0
Weimer, S.	,,	37	13	6
Meyer, S. F., and Co.	,,	150	19	7
Steitz, J.	,,	87	13	6
Cleatwood and Co.	,,	34	14	6
Jackson, W. H.	,,	33	0	0
Bridges and Fox	,,	147	18	9
Smith, S.	,,	28	10	0
Jardine, Mrs. H.	Kew	69	10	0
Powell, F. S., and Co.	Egham	207	15	6

Heap, Thomas, Watchmaker and Jeweler, 3, Church Street, Barnoldswick. Trustee: F. Hully, Colne, Lancaster. Dated Mar. 24; filed Mar. 25; unsecured liabilities. £226 15s. 1d.; estimated net assets, £70.

List of Creditors—

		£	s.	d.
Edmondson, Elizabeth Jane... ...	Barnoldswick	103	12	4
Widmer, G.	Liverpool	19	0	0
Wragg, J., and Son	Sheffield	23	0	0

Hesse, George, Watch and Clock Material Dealer, 57, Goswell Road, E.C., and 7, Seaford Terrace, Stamford Hill. Assignee and Surety: Emil Wehrle, 47, Warwick Street, W., Watchmaker and Jeweler. Composition of 5s. in the £ by two equal instalments, at three and five months from date hereof, secured by a surety and assignment to him by way of indemnity. Dated Apl. 14; filed Apl. 14; unsecured liabilities, £1,017 18s. 7d.; estimated net assets, £344.

List of Creditors—

		£	s.	d.
Rasmussen, Webb. and Co.	London	69	18	5
Jeannot, Paul	,,	24	14	7
Baden Clock Company	,,	75	15	0
Seckel, S. M.	,,	53	13	6
Wehrle, Emil	,,	200	0	0
Merzbach, Lang, and Fellheimer ...	,,	31	16	6
Wellibald, Tweer, and Co.	,,	206	4	6
Jahresuhren, Fabrik	Baden	65	9	5
Guigon, Julien...	D'Aliermont	29	7	7
Moat, J., and De Cauchon	Paris	27	3	7
Garsant, E., and Co.	,,	42	0	0
Kuhn, Adolph H.	Switzerland	66	11	4

Kauffman, Hyman, Jeweler, 2, Elizabeth Street, Cheetham, Manchester, and 99, Leigh Lane, Horwich. Trustee: J. T. Trotter, Brazennose Street, Manchester, C.A., with a committee of inspection. Composition of 8s. in the £, payable 1s. 6d. at three months, 1s. 6d. at six months, 1s. 8d. at nine months, 1s. 8d. at twelve months, and 1s. 8d. at fifteen months, from Mar. 23, 1892, the last three instalments secured by sureties, and the whole further secured by assignment to trustee of debtor's estate upon trust until default. Secured creditors, £280 19s. 4d. Dated Apl. 4; filed Apl. 11; unsecured liabilities, £2,513 0s. 7d.; estimated net assets, £435 3s. 9d.

List of Creditors—

		£	s.	d.
Weill and Co.	London	115	3	6
Allday, A., and Sons	Birmingham	43	12	6
Britton, B. H., and Sons	,,	107	0	0
Booth, E. F., and Sons	,,	34	17	9
Branckense, J., and Co.	,,	201	17	0
Hulse, W., and W. A.	,,	219	6	10
Kimdert, F.	,,	89	1	0
Baum, A.	Cheetham	124	14	3
Hill, Thomas, and Co.	Coventry	163	17	0
Kinder, Thomas	,,	358	0	0
Rosenthal, Alexander	Jerusalem	250	0	0
Ashworth, J., and Co.	Manchester	57	2	7
Kaufman, Levi	,,	77	6	8
Rylands and Sons, Limited	,,	48	4	2
Wright, L. J.	,,	69	8	4
Harrison, James	Preston	104	10	0
Harrison, Ellen and Ann	,,	224	15	0
Bankers' Claims		44	19	11

Lower, Thomas, Watchmaker and Jeweler, 25, Market Hill, Sudbury. Trustee: G. G. Poppleton, 26, Corporation Street, Birmingham, C.A. Dated Mar. 28; filed Apl. 2; unsecured liabilities, £496 11s. 9d.; estimated net assets, £303 2s. 6d.

List of Creditors—

		£	s.	d.
Troup, J., and Son	London	83	0	0
Williamson, H.	,,	26	18	9
Holmes, W. J.	Birmingham	23	0	0
Lower, Mrs.	Sudbury	250	0	0
Bankers' Claims		16	0	0

Trott, Albert, Watchmaker and Jeweler, Wellington Street and Crescent Rise, Luton. Trustees: J. Morris, 8, Melson Street, Luton, and another. Composition of 12s. 6d. in the £, payable by five equal instalments, at three, six, nine, twelve, and fifteen months from date hereof, secured by a surety, and further secured by assignment to trustee, to realise in default. Dated Mar. 26; filed Mar. 31; unsecured liabilities, £1,064 2s. 5d.; estimated net assets, £687 11s. 11d.

List of Creditors—

		£	s.	d.
Harburgh and Co.	London	29	14	6
Little, J., and Co.	,,	51	0	0
Morris, Wilson, G. L., and Co.	,,	34	8	0
Stockall, J. J.	,,	29	3	11
Thompson, J., and Son	,,	31	10	4
Humber and Co., Limited	Beeston	70	19	6
Quadrant Cycle Co.	Birmingham	28	16	0
Trott, Miss E. S.	Luton	480	15	4
Trott, James	,,	25	0	0
Blomback, C.	Ronsdorf	24	1	9

Dissolutions of Partnerships.

Hawley and Son, Jewelers, 289, High Holborn. Mar. 25. As regards Thomas James Osborn.

Negretti and Zambra, Opticians, 11, Holborn Circus, 45, Cornhill, 122, Regent Street, and Crystal Palace, Sydenham. Apl. 1. As regards Joseph Warren Zambra.

Notices to Creditors.

Dickinson, William Richard and Charles George, Watchmakers and Jewelers (late trading as W. and C. Dickinson), 20, Manchester Road, Burnley, and 26, Manchester Road, Nelson. First dividend of 6s., at 7, Grimshaw Street, Burnley, Apl. 25.

Fraine, John Nelson, Jeweler, Regent Street, New Swindon. Proofs by Apl. 9. Trustee: Official Receiver, Swindon.

Greening, Joseph, Jeweler and Watchmaker, 60, Market Street, Longton, and 70, High Street, Burton-on-Trent. Proofs by Apl. 22. Trustee: Official Receiver, Newcastle-under-Lyme.

Grayson, Frederick, Electro-plate Manufacturer (trading as B. Grayson and Company), 16, Garden Street, and 19, Havelock Street, Sheffield. Dividend of 4s. 5d. at Official Receiver's, Sheffield, Apl. 11.

Ripley, Frank Tarn, Watchmaker and Jeweler, Burlington Street, Chesterfield, Derby. Discharge granted Mar. 3, subject to three months' suspension.

Rosenberg, Esther, Jeweler, 162, St. Paul's Road, Canonbury. Dividend of 7½d. at 14, Bennett's Hill, Birmingham, Apl. 11.

Taffinder, Frank, Watchmaker and Jeweler, 40, High Street, Rotherham. Dividend of 5s. 6¼d. at Official Receiver's, Sheffield, Apl. 11.

APPLICATIONS FOR PATENTS.

4,095.—"An improved pendant padlock fastening for bracelets, necklets, and other similar ornaments," C. W. Male, Birmingham, 2nd March, 1892.

4,254.—"An improvement relating to timepieces," M. Roelke, London, 3rd March, 1892.

4,255.—"Improvements in aneroid barometers," K. Corry, London, 3rd March, 1892.

4,294.—"Cross's electrical illuminations for clocks, etc.," W. Cross, London, 4th March, 1892.

4,318.—"Improvements in fastening devices for brooches," C. Kinsley, London, 4th March, 1892.

5,495.—"Improvements in watch and other keys, with comparatively small variable grasp," W. Whitehead, Manchester, 21st March, 1892.

5,559.—"Improvements in head frames for converting any pendant or brooch, etc., into a head ornament," D. Zimmer, London, 22nd March, 1892.

5,666.—"Improvements in brooches," C. W. Holmes, Birmingham, 23rd March, 1892.

5,692.—"Certain improvements in scarf slides, sleeve links, and bracelets," E. H. Durban, Birmingham, 23rd March, 1892.

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The Watchmaker, Jeweler and Silversmith.

EDITED BY W. J. LEWIS ABBOTT, F.G.S.

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The Moral of Large Companies.

THERE are some excuses for our trade feeling a little vain in relation to its connections with large companies, for assuredly the largest amounts that have ever been staked have been for the object of winning the materials we employ. Large companies, however, may be divided into the following classes:—First, those where the materials are fairly obvious, but the conditions are such that they can only be worked upon a large scale, and hence require a large capital; secondly, those where they are not so obvious, and when it requires all the skill of the absolute expert to predict with any degree of certainty whether they are there or not; and thirdly, where the material does not exist at all, other than on the paper of the prospectus. Under the first, we may class such operations as the De Beer's Consolidated, and many of the large gold and silver mining operations that have appeared. But, unfortunately, these are very much in the minority. It is to the two latter that most of the companies that are floated belong, and this for obvious reasons. To obviate this all sorts of ideas have from time to time been suggested. A favorite one with many is that we should have a Government Board, composed of the highest qualified *independent* men, to whom these gigantic concerns should be submitted, before asking the public to subscribe its millions.

It was the idea of many that these are lines upon which the Royal School of Mines should have been developed; but, alas! the authorities connected with that admirable institution felt rather disposed to widen the curriculum of subjects taught and drink deeper of the abstruse mysteries of the operations of Nature than to be more identified with mines and mining, until at last it was found desirable to alter the name of the grand old institution, with all its honorable associations, to the Royal School of Science. That such a board of appeal becomes absolutely necessary from every-day experience most people will admit. Nothing has shown this more, perhaps, than the recent trial of *Bewick, Moreing and Alford* v. *The Salati Company*. Here we have a company launched upon the world with hundreds of thousands of capital in such glowing terms that every share is eagerly taken up. The prospectus spoke of samples of quartz yielding over a thousand ounces of gold per ton. Gentlemen whom we must consider above suspicion were found ready to join the board, and the whole world went mad over it, and all this before one *disinterested* expert had been called in to give an opinion. Subsequently Mr. Alford, of the firm of

Bewick, Moreing and Alford, London, Johannesburg and San Francisco, was called in as being "the best authority of the rocks of the district" and "a gentleman of unimpeachable character." And what was the result? Instead of there being a true fissure vein outcropping for hundreds of feet, it was not to be found; and the small quantity of quartz obtained, instead of yielding gold by the thousands of ounces, had to be quoted in dwts.! Of course, the report of Mr. Alford, in the face of what had been set forth in the prospectus in the *quasi*-geological terms of those connected with it, and the assertions of the honorable gentleman who assured the subscribers that six figures a year profit were actually forthcoming, were not favorably received. Even the *press*, with only a very very limited exception, advocated the claims of the prospectus, which were set forth in such scientific-*sounding* terms, and by such high dignitaries. Even to the last, although its Peer and another director withdrew, its chairman fought and sought and tried to show that Mr. Alford was wrong, on the ground that he had not taken sufficient time to thoroughly report upon the property, and refused to pay that gentleman for his services. Hence the action. But the jury, having carefully heard all that could be said in favor of the company, and the existence of its thousands of ounces of gold, without allowing the counsel to finish, or the judge to sum up, handed in a verdict for Mr. Alford.

While we reflect upon the history of this great company, we cannot refrain from drawing a parallel with another that immediately concerns our trade, and upon which we almost alone have had the courage to speak what we have such cogent reasons for knowing to be true. Realising how much the earlier histories of the two parallel each other, we cannot predict a better fate for the one than the other, despite the sanguine opinions of those we consider to be terribly deceived.

The Institute of Mining and Metallurgy.

IT was quite a coincidence that upon the day the foregoing important verdict was given there should have been inaugurated an Institute of Mining and Metallurgy. Oddly enough, although metallurgy is probably the oldest of the arts, socially speaking, it has still retained the nomadic existence of its first artificers, and has not been housed in a separate institute, an honor acceded to its younger sisters, engineering and architecture; and we think we may add to its juniors, agriculture; for, although the Hebrew legends make man first a husbandman, then a shepherd, and then a metallurgist, we are not so sure that this succession can be supported by fossil evidence. Man was probably a hunter first, which taught him to make stone weapons, which, in turn, gave place to those of metal, and it is in association with the latter that we find the remains of domesticated animals. But now this much needed institution has been inaugurated—associating, as it does, the brightest ornaments of the profession—we may expect to see much practical good, and for aught we can say, some sort of a board, such as we have indicated, may eventually grow out of it. It consists of members, associates, and students, its objects being to promote the scientific development of mining and metallurgical industries. It will, therefore, form a place where new processes can be described and discussed and experiences compared. The scientific and the practical will thus be brought together, and in some of the rich harvests arising therefrom every branch of our united trades may be able to reap some benefit. We are disposed to anticipate from this Institution many valuable papers upon metallurgical processes which will have a special value to our trade, and which heretofore have not been read because such subjects belonged to several societies, and therefore to no one in particular.

Its first meeting was held in the theatre of the Jermyn Street Museum (the old lecture-room of the Royal School of Mines), on the 18th ult., when the President, George Seymour, Esq., M.Inst.C.E., A.R.S.M., delivered his inaugural address. It consisted of an outline sketch of the history of mining and metallurgy, which means the history of civilisation. After the meeting an inaugural supper was held at the Criterion, where the professional and scientific side were equally well represented. When it is said that Professor F. W. Rudler—"the very finest speaker of the day"—gave the toast, "The Institute of Mining and Metallurgy," it is only natural to expect a model, practical, scientific speech, thundering applause, and a sanguine belief in the unbounded possibilities of this Institution.

The Montana Sapphires.

CONTROVERSY respecting these gems still continues on the other side of the Atlantic. A great proportion of their champions, however, had better by far keep their ignorance to themselves, as one is surprised to see upon what slender ideas people will rush into print. By so doing they only injure the cause they wish to support. There are others who approach the question only from their relation to the trade, and ask if *anyone* has ever seen these stones on the market, as they have not been able to hear of anyone who has. But perhaps the most telling letter that has appeared is that of Mr. G. F. Kunz, to whom the world is chiefly indebted for bringing these gems before the public. His remarks are chiefly directed to quotations from Mr. Streeter's reports, and the fifth edition of "Precious Stones and Gems." He quotes the following extract from page 200:—"A few of them, however, were carried away by wandering miners, and ultimately found their way to Messrs. Tiffany, jewelers, New York, where they were recognised as sapphires and rubies, and the fine gem stones, after cutting, found a ready sale at good prices." Now there is no doubt that is the most that has ever been claimed for them, but Mr. Kunz says: "In regard to this statement, allow me to say Tiffany and Company never sold a fine blue sapphire or a ruby of pronounced color from Montana. The stones were one and all only what can be called fancy sapphires, less than 15 dols. a carat. Even this rate may seem high, but the fact that they were cut in the United States considerably increased the cost of cutting." Finally he says: "Fine blue sapphires and red rubies have never been found in Montana, and it is extremely doubtful that it would be possible to sell more than a very limited amount of these fancy colored stones in the United States, and less abroad."

To us it appears a great pity that some of the trade papers should be so jealous of the honor and credit of America as to lose sight of what might be the interest of their clients. It would not make an atom of difference to the American trade whether the Montana speculation turns out a dead failure or a gigantic success. It is capitalised by wealthy English nobles who can afford to lose what they have staked, and who will not distribute any more of their wealth if the concern pays. The stones will come to England under any circumstances, and here they will have to be bought. We do not wish to be hard upon the American press, as we probably have had more to do with things of this sort than most of the papers on the other side; but it ought to have struck them long ago that if really fine rubies and sapphires existed there, with all the prospecting that has been going on, and all the hundreds of thousands of carats of corundum that have been unearthed, at least isolated specimens of them ought to have been found.

Although a hitch occurred in the settlement of this great bargain, we are informed that it is all arranged now, and it will soon be proved if our position is justifiable.

Notes About Town.

UNFORTUNATELY, with few exceptions, trade is but little improved. I heard of one firm only, during the whole month, who were behind with orders and running overtime every night. A firm in the very front ranks certainly have not now more than one-third the number of hands I have seen sitting at their benches. One firm that I hardly ever knew to have a vacant seat recently discharged thirty hands.

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There has, however, been a little gleam of sunshine to cheer some of the manufacturers' hearts. I recently called upon a manufacturer who turns out gold novelties, and saw a good sized parcel that had just been selected for the French Market. This is very gratifying, as some people carry the milliner's idea into the jewelry trade, and think that the finest quality novelties emanate solely from the French capital. But as these goods were for the first French houses, it is certain that they appreciate our novelties and the quality of our work.

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There is something about the best of them, which caused a great American, who was credited with a superabundant introspection, to exclaim, "Paris makes things for a day, America for a month, but London for ever."

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Talking about novelties reminds me of the new brooches that I have lately seen very much about the West-end, both in windows and on ladies. By their style and finish, and the materials of which they are made, I should imagine they emanate from Newman Street. Although they might pass under the name of wire-knots, they are not knots at all, but mixtures of all kinds of knots and conventionalized curves with re-entrant angles. Some of these are the most charming geometrical figures that have ever been produced. They are made in matt and burnished, or mixtures of gold and platinum, and some new varieties of imitation hammered work are also introduced with very pleasing and novel effect. I hear from the retail trade that they are selling well.

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They have also been introduced with even more success to the new chatelettes. The dangers and temptations of the ladies' small ball alberts, as they dangled unprotected from the pocket, became too evident, from the number of watches that were snatched when the chains were so exposed. In the new chatelette the termination is one of these charming little brooches, which can be pinned into any part of the dress, and thus hold the watch firmly, and at the same time gracefully, and can accommodate itself to any kind of costume.

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When we look at some of the magnificent old enamels, carved agate, and various other snuff-boxes, which were fashionable at one time, and realise their intrinsic merit, we are inclined not only to forgive the pernicious habit through which they originated, but are almost led to lament its disappearance. It cannot be said our artists are dead, and the arts all lost; but in these matters the want has been always the father of the supply. A few years ago someone had the courage to introduce *bonbonnières* in this popular form. These were silver, but they have been increasing in numbers and in quality until now one sees some really fine specimens of real art in these taking little articles.

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The latest of these are pierced and chased in gold or silver-gilt, with mother-o'-pearl showing through the interstices. They are usually of Louis XIV. and XVI. style. They are finished in high art; none of the so-called modern antiques, which allow an article to be left with the saw marks upon it. Generally, that style is only a cloak for bad workmanship, and still worse finish, and I hope we shall soon see the last of such suicidal rubbish, which is a disgrace not only to those who turn it out, but to the trade upon which it is foisted.

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Numerous presents have taken this form lately, in which colored gems and carved stones have been introduced, with very creditable and pleasing effect.

The Markets.

DIAMONDS.

Amsterdam, May 24th.—Upon the whole there is but little change in this market since last month. Prices certainlyare lower; Kopjes and rough are not finding a ready sale, and none of the factories are busy. If it were not for the several failures that have occurred in Paris, which have made the trade a little careful, speculation under the former condition of things would sure to be going on, especially as we are nearing the Russian-Asiatic fair of Nishui-Novogorod, at which large quantities of good-sized stones are always disposed of at higher prices than they will realise in European markets.

Paris, May 25th.—The diamond market here appears quite disorganised owing to the several great failures in the trade, confidence is very much shaken, and little or no speculation is going on. A few travellers are arriving, and we hope from advices that the American buyers will soon arrive, not only from the States, but from South America also. Prices are very low.

London, May 29th.—The London market appears in very little, if any, better state than either Paris or Amsterdam.

IVORY.

There was a pretty good attendance at the last ivory sales in London, but the market was nevertheless very sluggish. In some cases East Indian, both large and medium, were £5 lower; billiard pieces about the same amount higher; smaller were cheaper; most other kinds were lower; teeth, above 45 lbs., realising about the same price as last sale. There was, upon the whole, a fairly mixed sale, including rhinoceros, barbrosa, walrus, seahorse, etc.

SILVER.

The extremely low prices ruling last month caused some of the Nevada mines to close down again, as the owners consider silver not worth raising at the price, and that it could not remain under 40d. very long. During the month there has been an upward tendency upon the whole, but it was not till about the middle that it reached 40d., above which it has remained nearly every day since. Nov.'s prices at present are $40\frac{3}{8}$.

COPPER.

There has been a remarkable upward tendency in the copper market, from about £45 to £47 10s.

TIN.

Tin has shared a similar fate, rising from £93 15s. to £97 17s. 6d.

SPELTER.

Spelter has remained steady at about £22 10s.

QUICKSILVER

at £6 15s.

Birmingham Notes.

(By our own Correspondent.)*

THERE is but little, if any, change in the state of trade here to report since my notes of a month ago. So far as I can gather from careful inquiries the gloomy outlook then noted has not perceptibly improved, although possibly we are getting somewhat more used to it. Of course, the trade has now entered upon the usual summer lull, and we cannot expect much improvement for the next month or two. I must confess, however, that the conditions are rather darker than usual this year, as the depression commenced so much earlier, and the wonted activity of the early part of the year has been lacking.

STILL I have no desire to put on too desponding an aspect, as on the whole things are, I believe, better than might have been expected from the operation of the long series of causes that I detailed last month. The only thing I then omitted, as tending to a continuance of the depression, was the uncertainty as to the dissolution of Parliament. We shall experience no definite revival of trade until after the General Election. This is the general opinion of business men here, and it is one that is based on common sense.

I HAVE no less than three deaths to report of prominent men in the Birmingham trade during last month. First in interest, perhaps, comes the remarkable robbery of stock from Mr. M. J. Goldsmid, and his subsequent suicide. The next death is that of Mr. Allday, sen.; and the third, that of Mr. Thomas Prime, of electro-plate fame. The firm of T. Prime and Son is one of the oldest electro-plate businesses in Birmingham, and it has long been noted for good work. Mr. Prime died at a good old age, after doing good service to the trade. His death, I presume, will not in any way interfere with the business of the firm.

ANOTHER matter of considerable interest to the trade is the extensive robbery of goods from Mr. S. Lyon, of Frederick Street, by his porter, a youth of about eighteen. It seems that this young gentleman for some time past must have been helping himself pretty freely to any valuables that came in his way, and converting them into cash for his own advantage. A considerable amount of cash—some £38—was found at his home, and although so young he had a good account with the Post Office Savings Bank, his pass-book showing, among others, one item of £30 to his credit. The manner of his capture shows that his dealings were of a wholesale nature, and also that he was getting reckless in his methods. He took a matter of something over 100 ounces of gold to Messrs. Lees and Sanders, refiners, asking them to purchase it. This gold was not merely old scrap, but included new goods, brooches, chains, etc., quite fresh from stock. The character of the stuff offered them excited Messrs. Lees and Sanders' suspicions, and they took it in, telling the young man to call next day. Meanwhile, they communicated with the detective authorities, and on calling next day, according to arrangement, the youth was arrested by Inspector Dobbs.

IT is further remarkable that this same individual had been in communication with Messrs. Spinks, of London, offering them gold and gems for sale, and the very day that he was arrested Messrs. Spinks had written to the police department here, making inquiries as to his *bona fides*. These, undoubtedly, would have led to his immediate detection, even had he not been previously arrested.

IT is impossible for me to further discuss this matter, as at the time of writing it is under remand. I shall probably have more to say about it next month. Still one is tempted to wonder how on earth, under any businesslike system at all, the fellow could possibly have got hold of the stuff in such immense quantities without immediate detection.

I RAISE my hat in deference to Mr. Councillor Adie, well known as the quondam senior partner of the firm of Adie and Lovekin, and now giving his time and businesslike abilities freely for the benefit of the Jewelers' Ward in our City Council. Mr. Adie got in by but a narrow majority, but as a "miss is as good as a mile," a win, presumably, is much better. Mr. Adie had to stand a good deal of chaff during the contest, about his firm's "female labor" and "gas engine," of the rights of which I am quite unable to speak. I do know, however, that the firm has had much to do with the lowering of prices and the cheapening of production during the last few years. Whether this constant downward tendency is really to the advantage or otherwise of the trade at large is a matter open to doubt.

LOCAL excise authorities are, I notice, looking after the Plate licence infringements just now, one or two defaulters having been prosecuted. This is well, as if the honest trader has to pay the licence, he is certainly entitled to the protection for which he pays. I hope the authorities will continue on the alert, or abolish the licence altogether, which would be much better.

I TAKE it as a bad sign of the state of trade when the electro-plate people are quiet, and just now there is much grumbling from this section.

ON the whole, the shipping trade has been very quiet during the past month, although I hear of a little stir in the Cape markets, while there have been one or two Canadian buyers here recently. They, however, have not bought largely, their demand being for nothing but novelties. I somewhat doubt the wisdom of the Birmingham manufacturers so willingly sending all their new patterns and fresh ideas over there, to be made up on the spot as required; for I believe this is what the Canadian trade has come to.

BIRMINGHAM trade has been rather badly hit in the stoppages of Larrett and Co. and of Bowman. I am sorry to notice some very large amounts in the lists of local creditors. How much of this can be put down to pure misfortune, and how much to want of business caution?

RATHER too bad this! I was considerably amused the other day at hearing of a cutting price list for repairs being carefully put into the letter-box of a neighbouring rival.

A Swell Cranksman Surprised.—A respectably dressed cranksman was recently surprised to find that his clumsy operations had attracted the watchman who parades near South Castle Street, Liverpool, and found himself in the hands of the constable just as he had his booty packed up on the premises of Messrs. Frodsham and Keen, into whose shop he had entered.

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* We must not be understood as endorsing all, or necessarily any, of the opinions of our correspondent, who writes on his own responsibility.

Sheffield Notes.

(By our own Correspondent.)[*]

THE consequences of the recent amalgamation of Telephone Companies have not been long in developing. The National Telephone Company has just issued a circular containing a revised scale of charges and, as has been euphemistically admitted by the General Manager of the said company, "it does not seem to have given universal satisfaction." The absence of universal satisfaction took the form of a crowded meeting of Telephone subscribers held in the Cutlers' Hall, and presided over by the Master Cutler. The Chamber of Commerce, which had previously discussed the situation, was officially represented at the meeting. The obnoxious feature in the new scale is a charge of one penny per message over and above 1,000 messages per annum. As this in the case of some firms means a rental of £40 or £50 per annum (Thomas Firth and Sons estimate theirs as high as £150), the absence of universal satisfaction is easily accounted for. Although the report of the meeting takes up three columns and a half in the local press not much merely declamatory rhetoric was indulged in. Those present were perfectly good natured, as Sheffielders in public meeting assembled generally are, but meant business. Negotiations had previously been opened with the New Telephone Company, popularly known as the Duke of Marlborough's, and it was now officially intimated, that in the event of 500 subscribers signing agreements for three years at the rent of £8 per annum, this company was prepared at once to commence operations in Sheffield. An organised movement was also initiated in the direction of rescinding all facilities granted in the matter of way-leaves, and as the Town Council is expected to do the same at its next meeting with regard to underground wires, it will be seen that, metaphorically speaking, we have got our foot on the neck of the National Telephone Company. Although no official intimation has as yet been given, it is easy to see that the obnoxious circular will be withdrawn, and we shall get our own way without calling in the aid of the Duke of Marlborough. The National Telephone Company will thereby lose prestige, but that is a matter the directors must settle with the not over-wise individuals who have advised them.

THERE is, of course, another side to the question. Sir William Long remarked at the meeting that he, as a journalist, was under obligation to the National Telephone Company for showing him what would "fetch" the Sheffield public. The sally was received with laughter, which shows that the sarcasm was only partly understood. There has been, in point of fact, a tendency on the part of business men to look upon Telephone Companies as in some sort philanthropic institutions, whose sole object was to benefit that deserving being, the Sheffield manufacturer. It is one thing to take advantage of a healthy competition to get what you want as cheaply as possible, it is quite another thing to take advantage of an unhealthy competition in order to screw prices down below the paying point. This last is what not a few Sheffield manufacturers tried to do—notably some who aired their virtuous indignation at the meeting. In this they certainly did not display much business shrewdness. Even now they do not seem to have the slightest idea that their own conduct has been instrumental in bringing about what they evidently look upon as a catastrophe. The latest indications are that the New Telephone Company will come to Sheffield. The Sheffield public will therefore have one more chance. If, learning wisdom from past experience, they are willing to pay a fair price for good service, all will be well. If not, then it needs no prophet to foresee that they will be ultimately handed over to the tender mercies of some monopoly, when their last end will be worse than the first.

NOTWITHSTANDING the depressed state of trade, a considerable amount of business is being done in cups, goblets, and other trophies. This branch of the silver and electro-plate trade is steadily growing, and as the season comes round for the numerous competitions at which these articles are presented as prizes, manufacturers find them a welcome addition to the sum total of their orders. Even in quiet times like the present, the volume of trade in these articles is sufficiently great to give to business a certain amount of briskness, in which, fortunately, most silversmiths participate. The best news, however, for manufacturers this month is that the American market is taking increased quantities of silver and electro-ware. It seems that wealthy Americans like the English patterns, and, despite the M'Kinley tariff, are willing to pay for them. This, together with the orders that generally come in for the Whitsuntide trade, is sufficient to give a noticeable improvement to the aspect of things generally, however long it may last.

I SUPPOSE it would scarcely do to class a fashionable wedding with the "numerous competitions" incidental to the season of the year. Nevertheless, the recent marriage of the Hon. Osbert Lumley, of the 11th Hussars, brother of the Earl of Scarborough, to Miss Constance Wilson Patten, daughter of the Marchioness of Headfort, has been the occasion of the production of a very beautiful silver tea service and tray, by Messrs. John Round and Son (Limited), of Tudor Street. The articles, which were of the "can" pattern and finely engraved, were the gift of the tradesmen on the Sandbeck Estate. The present was much appreciated by those most interested, and was described by Captain Lumley as "extremely handsome," and "both useful and ornamental."

AN appeal has been made by Mr. J. T. Cook, head-master of the School of Art, for subscriptions towards the removal and completion of the Wellington monument in St. Paul's Cathedral. Alfred Stevens was in so many ways intimately connected with Sheffield and its School of Art, that it is believed there are many here who would be glad to co-operate in this National undertaking, if the opportunity were afforded them. I am curious to see how the appeal will be responded to. Our manufacturers have not yet attained that love of Art for Art's sake, which characterised the merchant princes of Italy during the Middle Ages. If the truth must be told, they are still a trifle Philistinish. Since Sir Philip Cunliffe Owen praised Mr. Cook, the council of the School of Art have discovered that they have a good man at the head of the school. In like manner, when they hear what such men as Sir Frederick Leighton have to say regarding the Wellington monument, they may come to the conclusion that Sheffield has reason to be proud of Alfred Stevens. This is about as far as one can expect the average British monied man to get in the direction of an intelligent appreciation of high Art. Their money, however, will go as far as that of the most genuine enthusiast in the direction of doing tardy justice to Stevens' noble work, by, in the first place, putting it where it can be seen; and, in the second place, completing it according to his original design.

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[*] We must not be understood as endorsing all, or necessarily any, of the views of our correspondent, who writes on his own responsibility

SOME difference of opinion is being expressed as to the wisdom of the action taken by the Sheffield Trades Council in a recent prosecution for false marking, instituted by them. The prosecution, which was against a London shopkeeper for striking the word "London" on blades which were proved to have been made in Sheffield, was not taken under the recent Merchandise Marks Act, but under an old statute of the reign of George III. A conviction was obtained, and now the prosecutors are being abused in certain quarters for their pains. The contention seems to be, that to strike the name of another town on goods made in Sheffield is not quite the same thing as striking the word "Sheffield" on goods made elsewhere. It certainly is false marking all the same, but the question is, as to whether any particular benefit accrues to the town from action taken in such a case. Messrs. Bartlett and Sons, the Trades Mark registration agents, declare that the practice is no offence under the Merchandise Marks Act, and that the prosecution had to have recourse to an old Act which applies only to London in order to obtain a conviction. This seems a strong assertion, but Mr. Bartlett offers to find a case if the Trades Council will undertake to prosecute under the Merchandise Marks Act, and as his offer has not been accepted, the presumption is that he is right.

THIS recalls the objection that was taken some time ago to certain contemplated amendments to the Act which, had they been carried into effect, would have tended to exterminate that class of manufacturers peculiar to Sheffield, the "little mesters." These men execute work for the big firms, striking the marks of such firms on the goods they make. Speaking by the letter this is false marking, but as it is clearly not done with a fraudulent intent it can scarcely be said to violate the spirit of the Act. In any case, to make the practice penal would certainly have the effect of improving the "little mesters" as a body off the face of the earth.

THAT the Trades Mark legislation as a whole, however, is intensely popular is amusingly enough brought out at the present on every political platform, where men of the most diverse political views are each and all taking credit to themselves and parties for what is universally regarded as beneficent legislation.

AT the third exhibition of Art Metal Work, held by the Armourers' and Braziers' Company of London, the industries of Sheffield seem to have been well represented. It is satisfactory to find that the art of saw-piercing is not quite extinct, as Mr. J. Garrill, of Sidney Street, has obtained a prize for a picture frame ornamented in that way. Messrs. W. Hutton and Sons take the second prize, £5, for hammered hollow-ware with a very chaste vase, the designer being Samuel Sims Wing. Prizes for blades were also carried off by two other Sheffield competitors, who in the honorary judge's opinion were equal in point of merit.

THE CHICAGO EXHIBITION.

HER Majesty's Government have increased the grant placed at the disposal of the British Section Committee from £25,000 to £60,000. They will thus dispense with any charges for space at the Exhibition, and will return to those exhibitors who have applied any amount they have paid on account. Spaces will now be allotted to these; but those who now apply will have to wait until the first applicants are satisfied. Our Trade Representative, Mr. Julien Tripplin, will be pleased to give the trade any information they may require.

Goldsmiths' Benevolent Institution.

ON April 29th, the 59th anniversary festival in connection with this admirable institution was given at the Holborn Restaurant, under the presidency of Mr. R. Williams (one of the wardens of the Goldsmiths' Company), in the unavoidable absence, through illness, of Mr. R. Ruthven Pym (prime warden). There was a good attendance of the prominent members of the Goldsmiths' trade, those present including: Mr. F. B. Thomas (president of the institution), in the vice-chair, Lieut.-Colonel Lambert (treasurer), Mr. J. M. Garrard, Mr. W. J. Hutchinson (chairman of the committee), Mr. W. A. J. Hickes, Mr. J. J. Symons, Mr. H. Summers, Mr. J. F. Och, Mr. J. Chapple, Mr. Mantell, Mr. W. Webber, Mr. R. Secker, Mr. J. Whitehorn, Mr. Walters, Mr. J. W. Thomas, etc. A well-arranged selection of music, both vocal and instrumental, was given during the evening by some of the most noted artists of the day. The loyal and patriotic toasts were very warmly received. In the toast of the evening, "Continued Prosperity to the Goldsmiths' Benevolent Institution," the Chairman said 500 more or less aged but deserving persons had been relieved by this society. The pensioners might begin to enjoy the benefits of the society at the comparatively early age of fifty-five, and he was glad to see that many of them continue to receive the payments from the institution until they were ninety years of age. There were now one hundred and twenty-two annuitants connected with the association, thirty-six of whom were those who enjoyed extra pensions through being themselves members of the society. While the institution was open to all who were deserving goldsmiths, without any distinction, at the same time those who chose to be prudent and join it as subscribing members were given 50 per cent. of their subcriptions back again, in addition to the annual annuity. (Cheers.) Mr. Thomas proposed, in warm terms, the toast of "The Chairman," who in replying expressed his thanks for the kind reference of Mr. Thomas to the Goldsmiths' Company. He next gave the toast of "The President" in complimentary terms, Mr. Thomas briefly replying. The toast of "The Treasurer, Lieut.-Colonel Lambert," was then proposed by the chairman, who spoke of the many years' noble service the Colonel had rendered in the most practical manner to the institution. His donations to the society during the past forty years had exceeded £2,000, which was a splendid example to the other members of the trade. In replying to the toast, the Colonel thanked the trade in general for the support they had given him during the time he had been their treasurer. Times had changed materially since he first took up the position, but he trusted the society would go on and flourish even more in the future than it had done in the past. He was very proud of his connection with the society. The remaining toasts included "The Trustees" (Mr. J. M. Hunt, Mr. J. M. Garrard, and Mr. H. C. Lambert), "The Stewards," and "The Ladies." The secretary announced subscriptions to the amount of £380, including 100 guineas from Lieut-Colonel Lambert, twenty-five guineas from the chairman, twenty guineas from the president, and twenty guineas from Mr. W. J. Jones.

CAUGHT AT LAST.—At the Birmingham Quarter Sessions William Adey was sentenced to five years' penal servitude for stealing lemel, the property of John Turner Johnson, Caroline Street, Birmingham. The detective further stated that he was an old offender, but that he had managed to elude conviction. On this occasion some pieces of iron wire were placed in lemel, by which it was recognised when taken to the refiner's.

Windows and Window Dressing.

By the Editor.

(*Continued from page* 219.)

WE now propose to turn our attention to window-stands, blocks, and trays, which may be of any pattern irrespective of the drapery. These fittings may be divided into two classes, first, those for which a solid wooden stand or frame with velvet-covered front edges is made (Fig. 13), and into which the various members (trays and blocks) fit; secondly, those in which the stand is dispensed with, and the various trays and blocks stood upon glass shelves. Frequently the same design can be employed either with or without a stand.

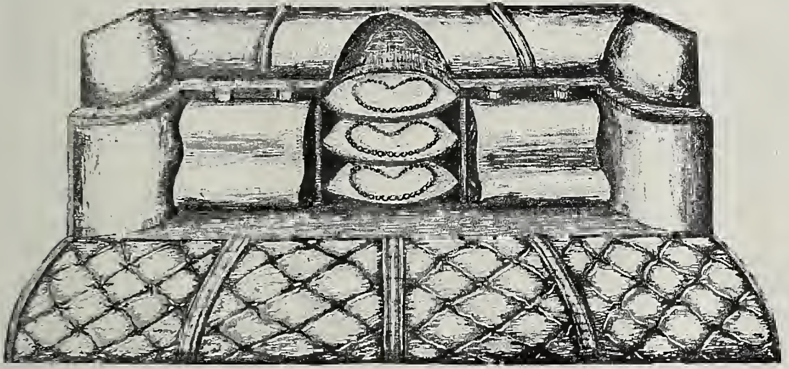


Fig. 13.

Our engraving shows an arrangement which could be used with either, although not very well with the latter, as the glass shelves would require too much "shaping." We will imagine the floor of the window either the proper height or brought up to it by an inclined name-board.

Fig. 14 shows the skeleton wooden stand necessary for such a window as shown above; it should be "got out" of one-inch pine, and all the visible edges, together with the central recess, covered with velvet. If nicely made a tool can be run round the edges, dividing it up into imitation panels. In dressing the window the stand is first put in, and then the trays and blocks.

The bottom front consists of four trays curved from back to front, and slightly so from side to side. They may be covered with cork before the velvet is put on, and the latter stretched tightly over them, or the velvet may be put on "full" all round, and fastened only at the edges.

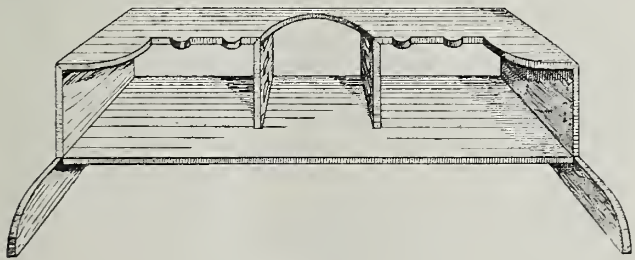


Fig. 14.

Under the former arrangement articles can be either stuck directly into the velvet, or attached by any of the usual methods. Under the latter it is best to allow for the number of pieces intended to be stuck, and divide the fulness accordingly, alternating the brooches or whatnot in the rows. The velvet is then drawn up into diamond-shaped areas, the jewelry coming at the angles, and the articles thus set snugly are elevated and prominent. There should be a little more fulness from end to end than from back to front. When the tray is dressed the whole contents should be quite firm, and the velvet drawn by the infoldings till it is quite tight, and in no way disturbed by being shaken. If this is the case, the position in which each piece of jewelry is placed will be maintained; if not, upon the slightest shake, they will immediately appear out of symmetry, some falling one way, some another. These trays are put in from the back, the fronts catching against a stop; they are then elevated into position, and a bolt attached to the bottom of first shelf of the frame is made to hold each in place. Three small slips of the same curve as the trays are placed in from above, one between each juncture, and can be employed either for any novelties, good rings or fichu brooches, according to the nature of the stock.

The principal floor which follows these trays is slightly elevated behind, and forms a very conspicuous position for the display of anything special. The two curve-fronted blocks form the ends of the next tier; they need not be made of more than half-inch wood, and the bent front only a sixteenth thick, especially if it be cork-covered. In the engraving these blocks are shown curved in one direction only, and standing vertically; but they might be curved from the centre to the side, and from front to back, or the front edge might be made to slope a little backwards. Each of these plans, however, would be at the expense either of greatly reducing the upper members, or, what is even more undesirable, carrying them further back.

The following two members are made with lean-back O. G. fronts; on the block side they can fit up closely, but the inner side can be finished to a scroll. Illuminated from behind the top drapery, articles on these stand out very prominently. The hollow must not be too great, or it will throw the articles into the shade.

The sides of the central recess are made to approach each other behind, and are covered with velvet. Three double pairs of stops are inserted into these, and upon these lie three shaped boards carrying necklets. These form most imposing positions for such articles. It will be noticed the straight edge of the shelf following the large scrolls is broken by two small projecting plinths on either side; upon these could be stood small ivory cups containing loose stones, or small pin-stands. A small flange is left between the edge of the shelf and the next row of blocks, upon which can be put any small articles of jewelry or loose stones, either upon the ledge simply, or on blocks. Such a ledge forms an excellent place for pairs of diamond ear-tops, sets of studs, choice little pieces of enamel, and such like.

Upon the next tier there are six blocks, made similarly to the end ones on the tier below, and "got out" of the same thickness of wood; hand holes should be cut behind for lifting them in and out. The two end blocks are curved along the front bottom edge, and from centre to side. The inner ends of the two central blocks are curved out so as to form a kind of dome over the necklets below. This daïs is greatly improved by running a tool round the edge. Each two of the back trays can be separated either with an ornamental strip, or one carrying brooches, or anything of that sort. Little reference has been made to the articles best suited for each of these members, as it has been left to the various stocks to supply whatever articles they were best able. This makes a pretty little window, and is suitable for a variety of stocks.

(*To be continued.*)

*

Openings for Trade.—Servia is now a market for Sheffield ware, cheap jewelry, and watches.

Our Unwrought Materials.

The British Vice-Consul at Lourenzo Marquez reports "There exist on the east coast, south of the Zambesi River, reefs of pearl oysters, of which the most important is situated to the south of Chiloane, in the Bazaruto Archipelago. The greater portion of the reef is within enclosed waters, and, as it has never been regularly worked, the pearls which could be found there must be of considerable dimensions. The natives in the locality of the pearl reefs occasionally find black pearls of great beauty, but their value is absolutely destroyed in consequence of the method employed in extracting them from the shell. This method consists in placing the oyster in the fire. A syndicate is being formed in Lisbon at the present time for the development of these fisheries."

FURTHER SUPPLIES OF "MEXICAN ONYX."

News comes from Chihuahua that a mountain mass of very fine onyx has been discovered, from whose sides the valuable product scales off in huge slabs like large slates; 86,000 acres covering the area has been leased by a company. The colors are the most varied known. Several other finds are recorded.

WHAT COLORADO CAN DO.

In 1890 the state of Colorado produced gold to the value of £902,000; silver £4,051,000; lead about another million; to say nothing of copper and other metals. Last year it made further extensive strides, and with the largest and best supplies of hematite known, and coal at 6s. 3d. a ton, and petroleum up to eight figures, the recent state of things in Old England do not look like making her a formidable competitor with the whole world.

A HUGE OPAL.

"Not an ounce more," said our friend's Indian guide, "the horse will never get down the mountain as it is, and we could never think of finding another for sale. Our lives are wrapped up with the horses." In another moment he was round the other side of the horse. "Here, wait!" said he, "you must take off a piece or two of that heavy stuff; we are overloaded!" Reluctantly our friend began to look over his specimens of opal in matrix, which he had been buying from the natives round Queretaro, Mexico, with a deliberation and hesitation that wore out the patience of the Indian. "Look here!" said the yellow-skin, "throw that away, and bring what you got; if you change another piece I go and leave you behind." There was no mistaking his determination. Once more seated, when a more annoying thing still occurred—an old Indian opened his stock of treasures consisting of probably some of the loveliest fire opals ever seen. But what could be done? It was a matter of life and death. "If you save them till I can get back into this country again, I'll buy them," said our friend. Unfortunately, however, before the return journey, someone else penetrated to the locality in search of the gem worth a banishment; and as a result, there is now to be seen in San Francisco what is claimed as the largest opal in the world. It is still uncut, and from the centre can be obtained a fine stone $3\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ inches. It is that variety known as garisol, or fire opal—of course the mass is several times as large as this. Before us at the present time is one more than half this size, which we have never regarded as *large*. But there are several kinds that pass under the name of "Garisol, or fire opal." One is a cherry-red clear bright homogeneous in hue. The other, although of the same body hue, has harlequin flashings of iridescent hues, which perhaps could be best distinguished as harlequin-garisol or harlequin fire opal. We hear that some have recently been offered by dealers round the West-end under the names of the New Yellow Sapphire, Brazilian Topaz, and several other names, which are nothing more than the clear varieties of garisol.

CONTROLLING THE PRICE OF COPPER.

It would seem that speculators had not learnt a lesson over the disastrous effects of the collapse of the French Copper Ring some two or three years back, the agitation of which has not even yet subsided, for we now hear a "combination" is being formed in America to control the price of this metal. A cable gives the following as the figures which the great copper mines have agreed not to exceed for the current year:—Anaconda Company, 75,000,000 lbs.; Calumet and Hecla, 60,000,000 lbs. each; Quincy, 12,000,000 lbs.; Parrott, 14,000,000 lbs.; Clark and Bigelow (controlling five mines), 65,000,000 lbs. This will exceed the output of last year by some 6,300,000 lbs. With the competition of outside mines—at the Cape and Chili in particular, which will naturally be worked more energetically at the slightest increase in price of the metal—we cannot see much hope for the success of such a "combination." They hope to keep the price up to about $6\frac{1}{2}$d. per lb.

PRODUCTION OF GOLD FOR 1891.

The following figures, showing the output of the precious metal in the four great gold producing regions of the world, may be of interest:—The United States heads the list with £5,790,000; Australia is second with £4,769,000; Russia comes third with £3,700,000; and fourthly, the Transvaal with £3,005,000. The most remarkable feature in this list is that shown by the Transvaal, which is but a very small tract of South Africa, and is the youngest of the gold producers of the world, yet it already comes within £600,000 of the Russian output; and there is no doubt that, if the present increase of output is maintained, it will come second, if not first, on the list for the production of 1892.

ALUMINUM BY ELECTROLYSIS.

Another patent has recently been taken out in America—this time by a New Yorker—for the electrolytic separation of this valuable metal from common clay, in a manner somewhat analogous to that in which silver is deposited from a silver solution in a battery. It can now be confidently expected that at any moment a simple electrolytic method will be discovered by which this metal can be reduced from clay at a trifling cost; it will then become a formidable rival to iron. We are extremely sorry to see so few contributions to this branch of metallurgy claimed by this country. We remember some years ago procuring specimens of cryolite for a gentleman, to be operated upon by a man in this country; his success, however, was not appreciated here, but the invention was taken over to America, where a company was started, which is now turning out the metal by the scores of tons. Recently the German Government have given an order for ninety tons, for the manufacture of army accoutrements. Aluminum has been substituted for cast-iron in the specifications for the dome of the tower of the new City Hall at Philadelphia. It will save the expense of painting, and reduce the weight of the tower by about 400 tons.

SOLDERING ALUMINUM.

The one great drawback connected with this metal is the difficulty with which it is soldered. Numerous methods have been proposed, and we have seen some very simple ones successful. An American tells us that the difficulty is entirely solved by using chloride of silver as a flux, and although we have not tried it, we have seen a flux successful that contained it. The chloride of silver is fused, finely powdered, and then ordinary solder employed in the usual manner with other metals.

Transatlantic Jottings.

(From Our New York Correspondent.)

THE lowering of prices, to which I referred last month, has been an overwhelming topic of conversation throughout the whole of the trade on this side of the Atlantic, as the difference is considerable, especially in ladies' 0 to 6 size.

* * *

THE Cyclo Clock Company, incorporated by E. Erschell, C. W. Meyer, and E. Klahn, with a capital stock of 250,000 dols., is to manufacture electric self-winding clocks, in Jersey City, N.Y.

* * *

THE Gorham Manufacturing Company are adding a new wing, 150 ft. long, to their present immense factories.

* * *

THE Meriden Silver Plate Company are also making titanic strides, having recently increased their capital stock from 45,000 dols. to 200,000 dols.

* * *

THE latest marvel emanates from the American Waltham Watch factory, or rather from a late employé of theirs, who claims to have discovered perpetual motion. He exhibits it in a machine that he has made. Now is his time if there is anything in it. It would be the lion of the fair.

* * *

I OFTEN read with a sort of mixed feeling the descriptions in these pages of some of the pieces of civic and other jewelry and regalia, but I believe that Tiffany and Co., New York, have recently turned out two or three pieces that would compare favorably with anything yet produced in Birmingham. We don't often appear to have the subject matter to deal with which lies at the disposal of the British jeweler. But in these cases it was different, and both being ecclesiastical the same material would be open to all. The first jewel was a unique bishop's ring, presented to Bishop C. E. McDonnel, of Long Island. It is a massive Gothic ring of 50 dwts. The central amethyst is one of the magnificent gems recently brought by G. F. Kunz from the Urals, surrounded by sixteen 2-grain brilliants of marvellous splendour. On one side of the shank is chased in high relief Murillo's well-known picture of the Virgin of the Immaculate Conception, and on the other the patron saint of the bishop. Those who have seen this charming jewel declare it is the finest ring ever made.

* * *

THE other piece is a matchless cross over 4 ft. in height and 2 ft. wide. In its centre it contains the largest known yellow topaz in the world, attaining the dimensions of 5¼ ins. in diameter. It is simply a mass of lovely gems carefully selected by the expert, Geo. F. Kunz, many of which are of extraordinary size and beauty. The cross was designed by Louis C. Tiffany. It is for the Church of All Angels on Eighty-first Street, N.Y.

* * *

THERE is always one dominant passion that seems to underlie human nature, and that is to have the most wonderful and unique thing known; but a Californian jeweler, whose establishment was recently totally destroyed by an earthquake, would no doubt have been content with the ordinary things of life.

* * *

AS emeralds have become fashionable, they are now added to the prodigies of Montana. One man claims to have found one in one of the gravels, absolutely pure, as large as an egg. Some of the Maiden Laners suggest he means a snail's egg, but others affirm it is not an emerald at all.

THERE is a decided taste for emeralds, and numerous up-town jewelers inform me that they have been asked very much for them lately. Sarah Bernhardt recently had a magnificent gold purse set with emeralds made by Tiffany and Co., which will help to make them popular.

* * *

OPTICAL business seems looking up a bit! What with the prominence given to the science by Dr. Julius King's peripatetic lectures to the trade, and one thing and another, many have gone in for side lines of these goods.

* * *

THE Harrisburg Optical Company has increased its capital from 12,000 dols. to 100,000 dols.

* * *

I RECENTLY heard a case of a dog that decidedly had a taste for diamonds, so much so that when its master dropped a valuable one upon the floor the creature, with canine sagacity, swallowed it before his master could pick it up. Emetics had to be resorted to, which proved successful; but still Aaron Barrick thinks the taste is even more dangerous in a dog than in a woman.

* * *

THE plant of the Keystone Standard Watch Company has been sold; one account has it, for 6,000 dols., which carried a mortgage of 50,000 dols.

* * *

THE Elgin National Watch-Case Company has been incorporated with 250,000 dols. capital stock. They contemplate doing a big business.

* * *

IN numerous parts of the country the early closing movement has taken deep hold, the summer hours being 5.30 all the week, with forty-five minutes for dinner, and one o'clock Saturdays.

* * *

A GOLDEN opportunity has offered itself to Parson's Horological School. It had about outgrown its old location, and is now to be removed to the Peoria (Ill.) Watch Factory, which will provide accommodation for at least 200 pupils. They will have all the advantages of the use of the Peoria Watch Company's plant.

* * *

THERE was a goodly number of moves on moving day (1st May) in the trade. The magnificent Hays Building, Maiden Lane, now completing, will be the location of many prominent houses in the trade, with the Gorham Manufacturing Company upon the ground floor, and the well-known American Waltham Watch Company on the second and third floors. The building is, as many have described it, a credit to the jewelry trade.

* * *

A SOMEWHAT new idea has been floated this side that would simply shock some of your aristocratic retailers. The manufacturers are advertising their specialities in the public press. Thus the Bryant rings are advertised in journals read by three million of people every month. It is believed the thing will work here, as no retailer tries to gull the people that he makes the things he sells.

* * *

ONE of the heaviest gold watches and chains on record was made the other day by a Maiden Lane firm for an Alabama customer. The watch-case is in the shape of an escallop shell, and weighs nearly 300 dwts.; the chain weighs 220 dwts. Affixed is a locket 1½ × 1¼, carrying a carat solitaire diamond.

Pressure on space necessitates the holding over till next month of the article on "Determinative Gemmology."

Diamond Field Notes.

(By Vaalite.)

Kimberley, May 1st, 1892.

At the present moment "Kimberley is out of town," a large proportion of the notable and prominent men being either in England or elsewhere; but the "diamond city" is none the less active for all that. The Exhibition buildings have been pushed along with titanic strides; and, what is more, all space has been applied for, and it bids fair to rival the most sanguine estimations of its originators. The Machinery buildings have not yet proceeded far. Here will be shown some of the most important exhibits, such as gold and diamonds. The Randt has virtually agreed to put on exhibit a month's aggregate output, which I hope, and have good reason to believe, will be 100,000 ozs. Of course, such a large amount of money could not lie idle long, as even a month's interest would be a nice little sum. But it is believed that it will remain on exhibit for that time, and that a model of it will be made for future use. One of the most important features will be the exhibition of a quantity of the gold quartz from the vicinity of Kimberley, of which I spoke last month. This will be crushed, and thus demonstrate incontrovertibly that there is other mineral wealth around the "diamond city" besides the king of gems. There are also other minerals that will make a presentable show, and, let us hope, induce people to attempt to develop these industries. As it is, the one thought is diamonds, diamonds, diamonds!

But I venture to think that the great and lasting benefit which will arise from the Exhibition will be, that it will set people to make a thorough survey of the whole district. What we want is not a few mere surface scratchings by individuals, who depend upon the return of the diamonds they get, but a thorough geological survey; and this I consider ought to be done by the Mother Government. The British Geological Survey is now drawing to a close, and there are numerous able officers who are now being thrown out of employment. These would find a profitable field for labor out here. Who, for instance, would have thought of gold being found within fifty miles of Kimberley? But why should it not? We don't know where to look for anything here. It is said that the De Beers would be opposed to such an action; but, first of all, De Beers are not everybody; and, secondly, there is no reason to suppose they would oppose the development of the wealth of the diamond fields. That they do many things which really does develop the Colony cannot be doubted; but when they do, it is said by many it is for their own ends. Thus their recent actions in connection with the Chartered Company are very adversely criticised by some. The affair of what appears breaking faith with the largest syndicate in the world has not been smoothed over, and under no circumstances will it have a good effect, even granted that it was done by two directors without the knowledge of the board. It speaks of a curious state of management when two directors can do as they like with a half a million's worth of diamonds. However, it is not likely to happen again; in fact, Mr. Rhodes has fixed a minimum price, with the result of a rise in the price, and a large demand for the next three months is anticipated. An important alteration in their balance-sheet has been made, and it will in future be made out up to June 30th so that the next balance-sheet will extend over a period of fifteen months. For some time prior to the departure of Mr. Williams, the general manager of the De Beers, a motion was on foot for the reduction of the labor to eight hours a day; but although he departed before it bore any fruit, it is certain to be brought forward when he returns, if not before.

A clever catch of fourteen native I.D.B's has recently been effected by the detective department, who set a trap into which the otherwise wily natives fell. Another trap, which proved a successful and amusing bait, was recently laid for a man, who is said to be the private development detective of the De Beers; at any rate, he is always doing nothing except watching the movements of other people. Having heard that Mr. Armstrong, one of the heroes of the Wesselton Mine, was successfully exploring some new ground, he tried to bribe one of the black boys, who forthwith communicated the fact to his master. A plot was laid, and the spy hied away by night to the appointed place, where Mr. Armstrong and numerous friends were waiting to duck him under water. He was further charged with trespassing, and fined £2, in addition to the £5 he paid the black boy.

Things have now settled down in Pretoria, as one might expect, for five diamonds do not constitute a mine. A three-carat stone was found the other day at Christiana. The Vaal diggers are doing well in many places, notably at Keiskama, Waldiks, and Gunggong, where stones of 61, 62, 65, and 72 carats respectively have been found. In N.E. Bultfontein, during the four weeks ending April 30, no less than 82,000 loads were washed, yielding 14,500 carats. The ground around and adjoining Du Toit's Pan is being developed, as many as 150 claims having been pegged off. The De Beers, however, maintain that it will not pay, but this remains to be seen. The great nuisance to most companies is the water at deep levels. In the Augustine it is flooding them out; and I hear that a Cornish pump is on its way out here, so that Captain Gilbert hopes to be able to keep it dry, or at any rate workable. The Gordon is in the same state, and no doubt the mining board will be obliged to interfere, and make every claim-holder pay a proper proportion of the pumping of each mine in which they hold claims. It would only be a just law, because as it is, a claim-holder before he can work his own claim has to pump out the water coming from those the monopoly have shut down.

I must not forget to mention that Contat, the original concessionnaire of the Premier, has commenced action against Ward. Poor old Ward! Another new chapter in the history of the litigation over this mine! The Kimberley Diamond Mining Company have purchased the mineral rights of the S. A. E. Co. of the Kimberley Estate. The Koffyfontein, Pioneer, and Koffyfontein Central Diamond Mining Co. were recently sold for less than a quarter of what they cost. The New Jagersfontein is finding well, and maintaining prices; during March 11,850 carats were found, valued at £21,275. The Randt output for March was 93,244½ ozs.

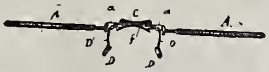
We regret to announce the sudden death of a well-known and highly esteemed member of the Birmingham Trade, Mr. John Allday, senior, which occurred on the 11th ult., at the warehouse in Warstone Lane. Just after the workpeople had left for dinner, the housekeeper heard a heavy thud upon the floor, and going up, found Mr. Allday had fallen. His son, who was downstairs at the time, was sent for, and Dr. Walsh was soon on the spot; but nothing could be done, and the unfortunate gentleman passed away in half an hour. He was sixty-four years of age.

On the 30th April Mr. W. Pringle, of Wilderness Works—a name familiar to all readers of this journal—came of age, which event was celebrated by high festivities, some sixty of the employés being taken to the Albany Hotel, Thames Ditton, and entertained at a well-served feast. After dinner various sports were indulged in, and in the evening a musical entertainment, helped down with the cup that cheers, interspersed with a few short and appropriate speeches, brought to a close one of the happiest days ever spent by many of them.

Some New American Patents.

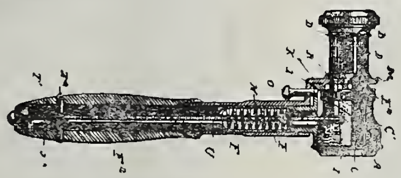
Eye Glasses.—Leonhard Rubel, New York, N.Y.

In a pair of eye-glasses, the combination, with the glasses, of a transverse piece having a curved rest, and cushioning pads applied to the rear ends of fulcrumed and spring actuated arms pivoted to the transverse piece.



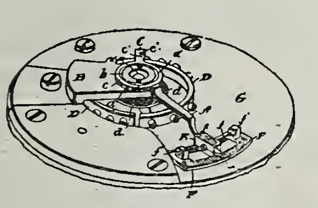
Opera Glass Attachment.—Charles H. Truax, Chicago, Ill.

The combination, with an opera glass having adjustable lenses and means for adjusting the focus thereof, of a separate handle having jaws adapted to engage the glass and provided with adjusting devices adapted to engage the adjusting devices on the glass to regulate the focus of the lenses.



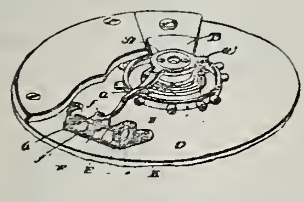
Watch Regulator.—Simon L. Gaarder, Starbuck, Minn.

A watch regulator which is provided with a part for supporting the curb pins that is separately constructed and is independently movable upon or around the pivotal centre of the regulator bar or pointer to permit an adjustment of the hairspring without moving the bar or pointer.



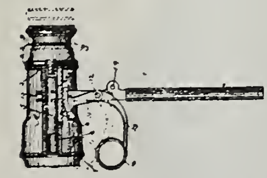
Watch Regulator.—Simon L. Gaarder, Starbuck, Minn., assignor of one-third to Knut L. Brevig, same place.

In combination with a regulator arm, a screw threaded shaft or arbor adapted to move the same, a worm wheel on such arbor, a worm meshing with it, having one end reduced and passed through a supporting plate, and the locking ring seated in an annular groove in said reduced end beneath the supporting plate.



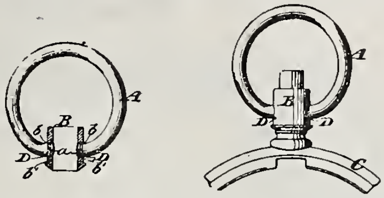
Opera Glass.—Carl F. Glocker, Albany, N. Y.

The combination, with an opera glass composed of stationary tubes and movable tubes which slide telescopically and whose movable tubes are connected, either directly or indirectly, to toothed gearing of a handle for said glass, provided with a segment gear which is pivoted to said handle and fitted to mesh into the gearing of said movable tubes, said segment gear having a lever fitted to be operated by a finger of the hand of the user.



Watch Bow Fastener.—Olof Johanson, New York, N.Y., assignor to the Keystone Watch Case Company, Philadelphia, Pa.

The combination, with the sleeve or stem provided with sockets for the reception of the ends of the ring, of the ring having its ends grooved, and pins extending through the sleeve or stem within its wall and through the grooves in the ends of the ring, said pins extending transversely to the axes of the sockets and transversely to the axes of the sleeve or stem.



◆

Mozart's watch, originally presented to the composer by the Empress Maria Theresa, has just been deposited in the Mozarteum at Salzburg. It is set with diamonds of considerable value, and it was formerly the property of Herr Pfeffer, proprietor of a large bathing establishment at Buda Pesth. Herr Pfeffer died last January, bequeathing the watch to the Mozarteum, and directing that it should not be entrusted to the Post Office, but should be sent by special messenger.

A gold nugget weighing 6½ lbs. was recently found in a cement mine, Brady Flat, near Washington, Nev.

The Irony of Fate.—As the thousands of visitors to the Navalries gazed on the magnificent gilt vase presented to the never-to-be-forgotten hero of Trafalgar, how few of them could have been made to believe that before six short months were over that priceless family relic would be seen exposed for sale in a jeweler's establishment! Yet, such is the irony of fate, that has decreed that anyone can now have this prize for 1,000 guineas. Its weight is between 700 and 800 ozs. It is now in the possession of Messrs. Emanuel, The Hard, Portsea.

There is an agitation going on in Germany for the introduction of standard screw threads, instead of the every-imaginable ones that are now in use in that country, in common with many others.

A Mr. Wortmann is said to have perfected an invention which has taken him over twenty years to accomplish, by which clocks can be made to run eleven or more years, and has sold the patent to Messrs. Tiffany, which is very possible. But in describing it our cousins inform us that the great discovery can be applied to lifts, and even street cars; in fact, it is a sort of perpetual motion!

According to *l'Industrie Electrique*, a Havre jeweler, who has an alternate-current transformer installed in the basement underneath his shop, has placed an iron grating over it, and in this way warms his premises largely at the electricity supply company's expense. To this the *Electrician* replies, that the Havre jeweler who warms his shop with an alternate-current transformer affords another example of the interest which is being taken in electrical heating for domestic purposes. Without going so far from home, we could point out a transformer chamber in London, constructed, as it should be, of thoroughly fire-proof materials, where a thermometer hung on the brick wall indicates 115° Fahr.

The Sancy diamond has recently appeared under yet new conditions. It was exhibited the other evening by Mr. J. Garrard—whose name is associated with more than one historic stone—before the Society of Antiquaries, when some of its remarkable adventures were detailed.

Telegraph Address—SYDENHAM, BIRMINGHAM. Telephone Address—4,059.

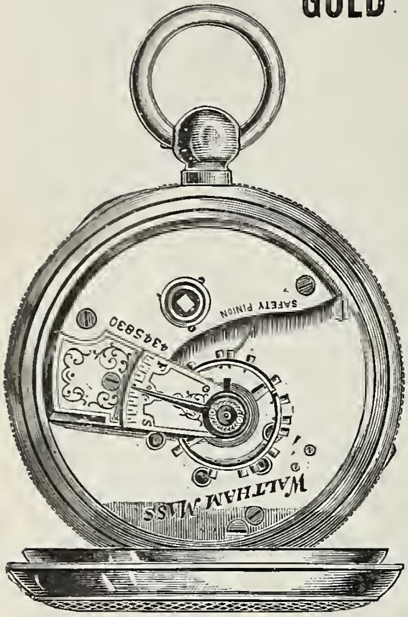
A. SYDENHAM,

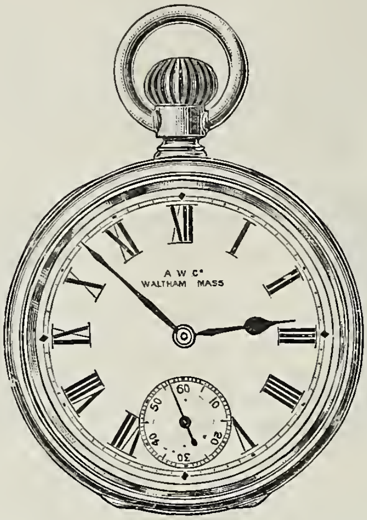
Wholesale & Manufacturing Jeweller,
26, Frederick St., **BIRMINGHAM,**
ENGLAND.

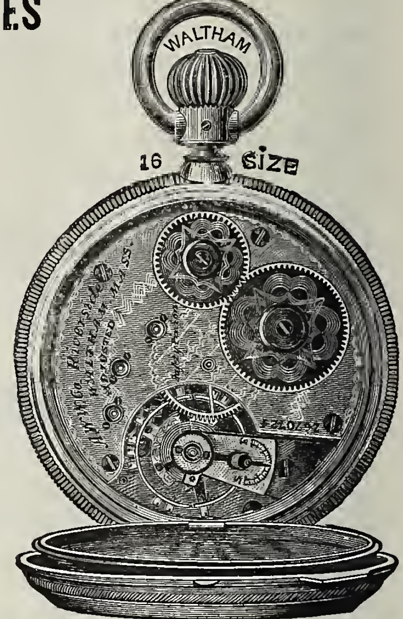
For Home and Export.

GOLD AND SILVER WALTHAM WATCHES

OF EVERY DESCRIPTION.







A Large Stock of these Splendid Watches to suit all Districts.

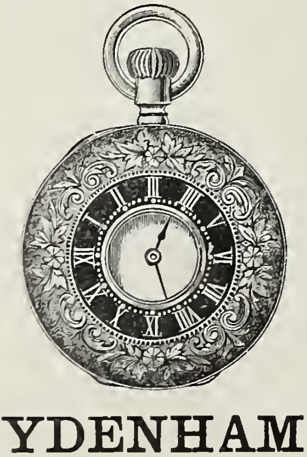
(ALL WATCHES HAVE COMPENSATION BALANCES, AND HAVE CRYSTAL GLASSES, AND, IN MOST CASES, BREQUET SPRINGS.)

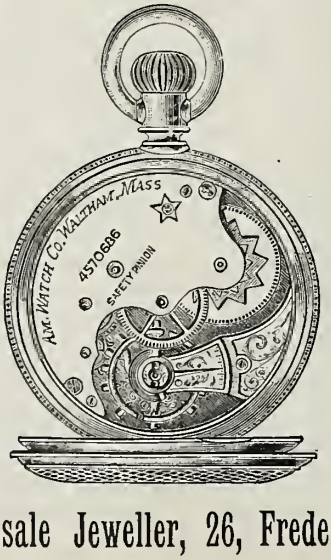
Gentlemen's Watches.	Key-winding	Keyless	Hunter
Silver Open Face Snap Cases, *from*	£1 12 9	—	—
Silver Open Face Spring Cases, *from*	1 13 9	—	—
Silver Hunters, *from*	—	—	2 0 6
Gold 10 carat Open Face, *from*	4 13 0	—	—
Gold 10 carat Hunters, *from*	—	—	5 17 0
Gold 10 carat Open Face, Keyless, *from*	—	5 8 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	6 10 0
Gold 18 carat Open Face, *from*	8 2 0	—	—
Gold 18 carat Hunters, *from*	—	—	10 8 0
Gold 18 carat Keyless, Open Face, *from*	—	9 17 0	—
Gold 18 carat Keyless Hunters, *from*	—	—	12 0 0

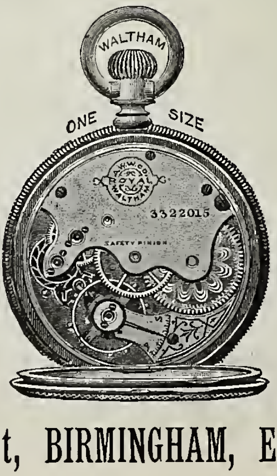
Ladies' Watches.	Key-winding	Keyless	Hunter
Silver Open Face, *from*	£1 18 9	—	—
Silver Hunters, *from*	—	—	2 1 6
Gold 10 carat Open Face, *from*	3 8 0	—	—
Gold 10 carat Hunters, *from*	—	—	4 6 0
Gold 10 carat Open Face, Keyless, *from*	—	4 2 0	—
Gold 10 carat Keyless Hunters, *from*	—	—	5 0 0
Gold 18 carat Open Face, *from*	5 19 0	—	—
Gold 18 carat Hunters, *from*	—	—	7 2 0
Gold 18 carat Keyless, Open Face, *from*	—	6 8 0	—
Gold 18 carat Keyless Hunters, *from*	—	—	7 12 0

GOLD AND SILVER WALTHAM WATCHES OF ALL THE BEST SELLING GRADES IN STOCK.

WALTHAM WATCHES FOR LADIES, Hunter, Half-Hunter, Open Face, Keyless, Plain, Engraved, Fancy and Enamelled Cases, 18-ct. and 10-ct., Gold guaranteed, and Hall-marked Silver.




AM. WATCH CO. WALTHAM, MASS
4570686
SAFETY PINION



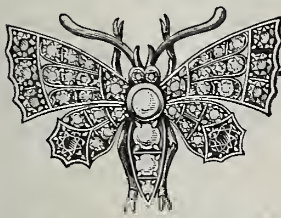
A. SYDENHAM, Wholesale Jeweller, 26, Frederick Street, BIRMINGHAM, ENGLAND.

Telegraph Address—SYDENHAM, BIRMINGHAM. Telephone Address—4,059.

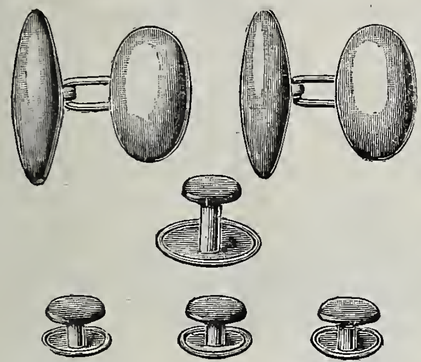
A. SYDENHAM, Wholesale & Manufacturing Jeweller, 26, Frederick St., BIRMINGHAM, ENGLAND.

For Home and Export.

SYDENHAM'S DIAMOND and GEM SET BROOCHES.

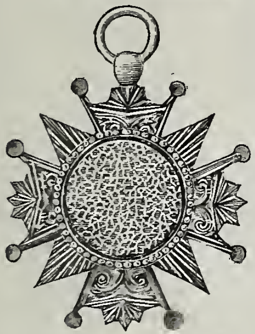


These diamond and gem set Gold Butterfly Brooches are the prettiest things ever made. Pearl bodies as sketch, 75/- each. Can be used as brooch or hair ornament.



18-ct., 15-ct., 9-ct., and Silver Link Suites, Studs and Collars of every description.

A. SYDENHAM for MEDALS



For Athletic Sports, Skating, Yachting, Boating, Curling, Golfing, Swimming, Shooting, &c.

Agricultural Shows. Root, Bird, Dog, Rabbit, Horse, Bee, Pigeon, Canary, Poultry Shows, &c.

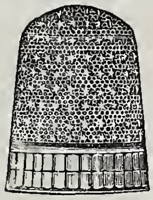
DRAWINGS and PRICES

On Application.

BRACELETS AND BANGLES

Of every description, from the cheapest to the most expensive.

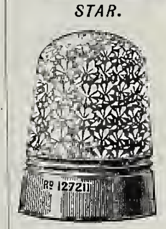
Bright Gold Bracelets, from 8/6 upwards.
Bright Gold Bangles, from 6/6 upwards.
Bracelets in Silver, narrow, Hall-marked, 3/- each.
Bangles in Silver at all prices.
Indian Bangles, -/8, 1/-, 1/3, 1/6, 1/9, 2/- each.



STAR.

This is the great house for **GOLD AND SILVER THIMBLES.**

Silver Hall-marked Thimbles, 7/6 to 18/- per dozen.



DAISY.

The New Dorcas Thimbles, same as drawing, and other pretty designs, 21/- per dozen. Plain Pattern, 17/- per dozen.

DIAMOND GOODS of every description.

Ladies' Diamond Rings, £1 to £20.
Gentlemen's Diamond Rings, £5 to £40.
Diamond Fichu Brooches.
Diamond Spray Brooches.

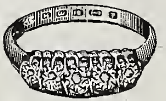
DIAMOND PINS from the cheapest to the most expensive.

Keepers—18-Carat—To those of my friends at home and in the Colonies who have not yet seen my splendid selection of 18-ct. Keepers, I ask them to take an early opportunity of buying samples of these choice goods at the most reasonable prices.

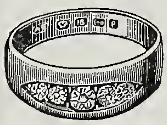
Keepers—9-Carat—The finest stock of 9-ct. Keepers in the Trade.

RINGS MY GREAT SPECIALITY.

LADIES' RINGS of the most choice description. I have one of the largest and best selections of Ladies' Gem Rings and Engagement Rings in the trade. Over 5,000 to choose from.

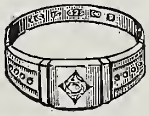


Ladies' Half-Hoop Gem Rings—All Diamond, 30/- to £50; Diamond and Ruby, 25/- to £50

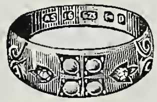


Ladies' Boat Set. Diamond Rings at all prices.

Ladies' Diamond and Gem Set Rings of every other description, 15/- to £25.



Ladies' 15-ct. Engagement Rings, same as drawing, and other pretty designs; sell very well. Real Diamond. 12/6 each.



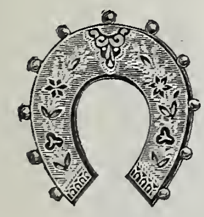
Ladies' 15-ct. Ruby and Pearl Gem Rings, like drawing, and various other most saleable patterns. 12/6 each.

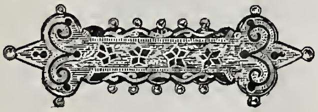
Gentlemen's Diamond Rings at all prices.

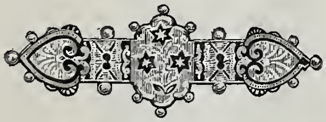
Gentlemen's 18-ct., 15-ct., and 9-ct. Signet Rings in great variety.

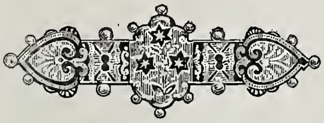
Special attention given to orders for **MASONIC JEWELS, SPECIAL PIECES, PRESENTATION KEYS, PRESENTATION JEWELLERY,** and **OFFICIAL JEWELS** of all kinds.

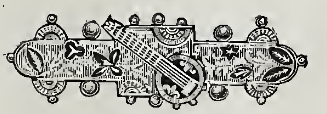
NEWEST DESIGNS OF 9-CT. HALL-MARKED BROOCHES.

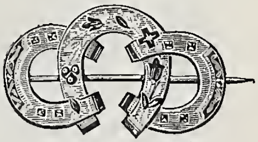












Special Line of 9-ct. Hall-Marked Brooches, various patterns, as drawings, and other pretty designs, all at 5/9 each.

These Brooches with Earrings to match, 8/9 per set.

SIMILAR BROOCHES, but larger size, 9-ct. **Hall-Marked** ... ... 8/3 each.
,, ,, ,, with Earrings to match ... ... 11/3 per set.

A large variety of all the most fashionable and best value patterns in 9-ct. Gold Brooches always in stock.

A. SYDENHAM

gives special attention to all Colonial Letters, and will be pleased to receive Orders, if accompanied with Cash or satisfactory English References.

26, Frederick Street,
BIRMINGHAM,
ENGLAND.

ILLUSTRATED PRICE LISTS ON APPLICATION.

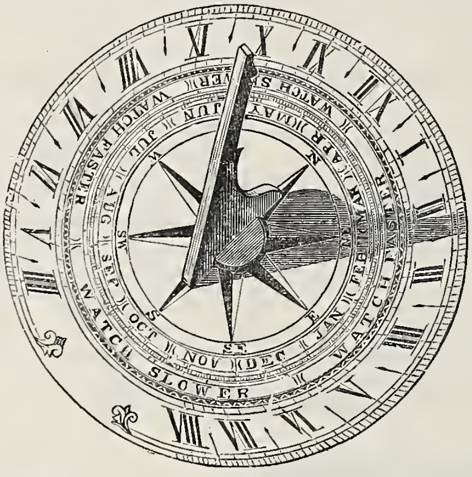
Things New and Noteworthy.

Mounted Oak Goods.

We have occasion to call the attention of our readers to the specialities of Messrs. Hammond, Creake and Co., of Oak Works, Sheffield, who claim to be the largest manufacturers of sterling silver and electro-plated mounted oak goods in the universe. This firm, who for more than ten years have devoted themselves wholly to supplying the local manufacturers, have now decided to open accounts with the trade generally. A visit to their factory is very interesting, as upwards of a hundred hands are employed in producing their many hundreds of designs in this fashionable and most useful ware. It would be difficult to discover a retail establishment where their goods have not been indirectly displayed. We heartily wish them success in their undertaking of dealing with the retailers direct, as we are sure the trade will appreciate this system, which, after all, is the true lines upon which business ought to be conducted. The expansion of this system year by year shows us that it will be adopted generally in the immediate future. Messrs. Hammond have a most comprehensive illustrated catalogue, which they will forward free on application.

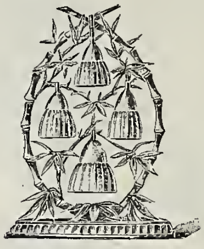
Sun Dials.

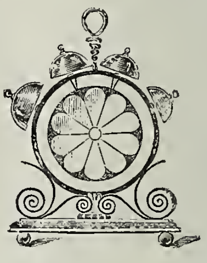
We are frequently asked who are the best firm for sun dials, the demand for which, according to all accounts, is greatly upon the increase. We are pleased to be able to inform our inquirers (and the information may also be useful to the trade generally), that Messrs. Francis Barker and Son, 12, Clerkenwell Road, E.C., have for the last few years been giving special attention to the art of dialing, and, by improvements they have from time to time introduced in the various processes of manufacture, together with new designs and ideas, they have gone a long way ahead of any other firm in this branch of business, which was practically dwindling away. They have now a separate catalogue of these useful instruments from under £1 to £50. They have also practical men who could give estimates and suitable designs for any kind of architectural surroundings. The large proportion of the compass trade this firm monopolises is well known, both to manufacturers and retailers, although there may yet be some who are unacquainted with the dimensions of their stock.

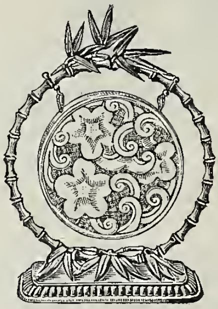


Art Metal Productions.

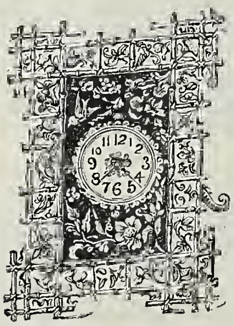
There is a school of Art critics who hold that the highest Art should be retained exclusively for the most expensive materials, and who very often appear to justify their assertions. If, however, they turned their axiom round, and maintained that "nothing but the highest art should be employed upon the precious materials," no one, with any idea or love of the beautiful, would feel disposed to raise an objection. But perhaps the best argument against the former is furnished by some of the many charming specimens of Art Metal Work that have been turned out from time to time, amongst which those designed and manufactured by Messrs. Townshend and Co., Holborn Viaduct, and Birmingham, stand prominent. It is always an artistic treat to stroll through their galleries, not only on account of the display of high art treatment and excellence of finish, but of the charming novelties that one finds upon each visit. On our last visit we were favorably impressed with a number of things, a few of which may be named. Following upon the large variety of gongs this firm have brought out, is a series of various designs in which the new principle is the same, *viz.*, the gongs of the Westminster chimes; sometimes accompanied by the "hour" bell, in other cases by the "chimers" alone. Of these we show two, with which it would be possible not only to "fill the air with music sweet," but to convey one's wishes all over the house. Another very pleasing effect arising from the juxtaposition of copper and gilt is to be seen in numerous articles; one of which is here given—

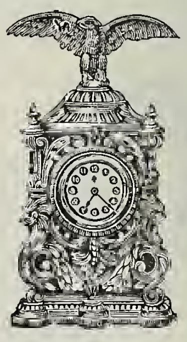






The appearance of this mixture forcibly recalls some of the choice old Oriental damasks. In clocks, perhaps, there is even greater variety from the massive "chimers" of every style of art down to the small but, nevertheless, very elegant and effective little articles suitable for the boudoir; such as the two illustrated below—





We regret the claims on our space will not admit even the enumeration of the great variety of novelties—nice, but not high-priced—that we notice continually flowing into these showrooms; so great, indeed, is the number of these, that the firm have found it necessary to issue supplementary catalogues of new arrivals, without waiting for new editions of their catalogues. We also note that the articles are all covered with a transparent enamel, far superior to ordinary lacquer, for it not only protects the articles from atmospheric influences, but gives them a much greater brilliancy.

Something New in Brooch Pins.

Of all the various contrivances that have been introduced there is none that embraces so many important features and advantages as the one lately brought out by Mr. J. Langdale, of Whitby Jet fame. There is neither joint to break, nor catch to strain, break, or damage. The pin is not confined and constrained at the expense of injury to move in one place, but has next door to a universal action. Fig. 1 shows a section of this ingenious arrangement, which is so simple as to explain itself. Fig. 2 shows a view of the back. It is thus plain that the pin has a ball head passed through a hollow ball, which forms part of the brooch, from behind. A slot is cut in the hollow ball at an angle of about 90 degs., so that the pin can move almost in every direction. A similar ball on the other side, slotted below, allows the pin to pass under, and another slot serves for its resting-place, with just a little "spring," sufficient to hold it snugly in position.

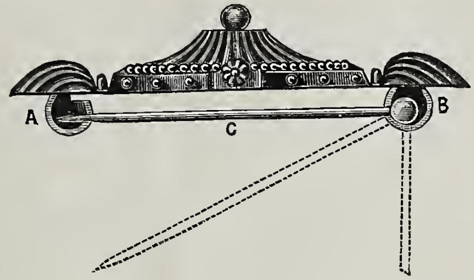


Fig. 1.

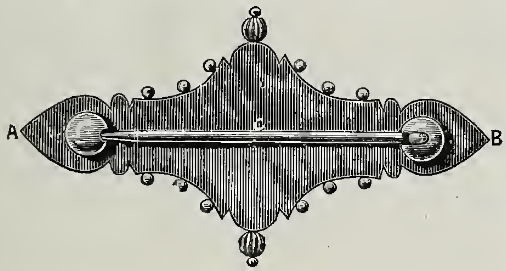


Fig. 2.

An American is making brooch-pins out of the *Solid* piece, instead of from three or four pieces soldered together, as usually done. The head is swaged (in dies) on to the wire, which is then drawn out to the required length, and the point drawn.

Are Things as Bad as Some Say?

Some six months ago we had the pleasure of calling attention to the great enlargements and alterations that had been effected at Messrs. Ahronsberg Bros., Birmingham, which at the time hardly seemed justifiable. However, we have not been kept waiting long before we have seen the remarkable development of trade going on at this establishment to such an extent as to fill up every inch of the additions. In fact, as one sees the increase of parcels come pouring in and going out, especially in the jobbing and appro. departments, it is already evident that further enlargements will soon be necessary. We notice they are going in somewhat extensively for silver plate, and some of their many choice patterns in muffineers, *tête-à-têtes*, and such like articles, certainly would be difficult to equal either in design or price. One line, of which they are making a great speciality, and one that a great many West-end jewelers have for some time found worth their while to take up, is silver-mounted walking-sticks. We know many houses who have done well with these, and should recommend others to try them.

Swiss Horological Exports for the Years 1889-90-91.

	Gold Watches.			Silver Watches.			Metal Watches.		
	1889.	1890.	1891.	1889.	1890.	1891.	1889.	1890.	1891.
Germany	227,457	235,872	200,096	728,485	731,601	650,779	254,664	258,904	237,323
Austria	70,840	78,637	79,369	252,007	274,481	287,099	62,356	62,264	71,453
France	14,193	10,760	11,467	82,479	44,696	51,958	158,275	112,979	135,034
Italy	29,868	40,433	38,998	201,394	206,803	194,492	55,501	72,013	72,852
Belgium	19,163	26,409	23,602	45,828	64,667	62,093	30,682	46,563	36,727
Holland	16,693	18,057	14,582	40,054	42,851	39,288	22,522	21,094	15,882
Great Britain	65,755	88,726	94,000	379,707	417,757	472,443	231,908	250,560	266,993
Russia	39,030	42,262	31,412	132,711	146,314	113,863	40,799	51,630	47,565
Sweden and Norway..	2,807	4,309	4,084	28,235	34,761	43,014	2,972	4,964	4,850
Denmark	979	1,447	1,687	8,237	9,070	12,110	2,208	1,595	1,724
Portugal	6,117	6,532	2,681	28,719	34,711	16,310	2,395	3,685	2,032
Spain	7,197	5,600	4,364	47,296	38,837	36,253	33,759	29,958	38,698
Greece	255	292	357	1,272	1,626	2,541	1,849	2,076	3,773
Danube Provinces	2,652	3,845	5,233	10,406	11,335	19,299	11,725	15,270	20,625
Turkey in Europe	2,174	3,399	2,653	16,800	33,139	53,782	6,709	13,645	21,551
Egypt	404	876	798	2,948	2,621	5,123	2,568	2,834	6,613
Algiers and Tunis	164	121	101	1,096	1,123	668	507	1,079	1,864
Africa	110	125	90	413	611	294	507	417	223
Turkey in Asia	265	396	443	1,274	1,605	1,438	900	1,181	969
British Indies	1,139	2,475	1,918	13,898	24,591	21,372	15,658	36,817	46,874
Dutch Indies	—	204	188	1,099	1,380	1,025	2,695	2,378	1,262
East Asia	2,804	3,737	3,128	107,779	139,016	90,159	45,622	37,737	18,233
English North America	521	1,620	407	1,085	3,208	5,101	395	712	742
United States	21,918	18,457	16,406	105,115	133,960	132,124	214,716	251,030	270,498
Central America .. South America	30,084	18,242	15,767	80,198	64,296	49,513	78,969	59,472	65,412
Australia	288	502	2,106	1,117	2,626	5,248	5,770	6,018	15,814
Other Countries	52	—	—	—	—	—	747	—	—
	562,959	613,355	555,937	2,320,238	2,467,686	2,367,389	1,286,821	1,346,875	1,405,756

Items of Interest.

Aluminium and Gold. THE quantity of articles made in aluminium finished matt, and red gold burnished, is increasing and occupying the place formerly held by the more exclusively silver articles. It will be remembered that several Bond Street firms were employing it for jewelry mounts, especially rings, four or five years ago. But we have yet to learn more of this metal before we can do justice to it or ourselves.

* * *

Bronzes Ancient and Modern. RECENTLY Professor Roberts-Austen delivered one of the series of lectures at the South Kensington Museum for the purpose of extending the knowledge of the science and art collections and of making them more generally useful. The subject selected was Art Metal-work; and the Professor pointed out that as a metallurgist he could only claim authority to deal with the materials employed for art metal-work. Setting aside wrought-iron, the most important of these were alloys, especially those of the copper-tin series (the bronzes), and those of the copper-zinc series (the brasses). When the elder Pliny wrote in the first half of the first century of our era, and described the nature of the early metallurgy, industrial art in bronze was really far advanced; although the metallurgist was far behind his contemporary artist. The learned Professor remarked that there was little use in attempting to compose a bronze with a view to enable it to acquire a *patina* in the London atmosphere. He took as an instance one of our last-erected monuments, the equestrian statue of Lord Napier of Magdala, opposite the Guards' Memorial in Waterloo Place. A few weeks ago the *patina* had begun to form, and iridescent tints played over the features, while unsightly rain-stains ran down his horse; now the layer was thickening, and a grey-brown tint deepening, but there was no velvety-brown oxide, or rich green and blue carbonate. The soldier, field-glass in hand, was sternly looking away from the Athenæum and the learned societies, as if conscious that, in the present state of the London atmosphere, he was beyond the aid of science, for science had clearly stated that so long as bituminous coal was burnt in open fire-places London must be smoky, and man and horse would soon be covered with a black pall of soot and sulphide of copper, such as now enshrouded the unfortunate occupants of the adjoining pedestals.

* * *

The Accuracy of the Pendulum. IN the February number of the *American Journal of Science*, Professor T. C. Mendenhall states that a free pendulum, vibrating under constant conditions, furnishes a more trustworthy standard for short intervals of time than any clock or chronometer. By an arrangement of mirrors, as described, with such a pendulum, it is claimed that in an hour or less a daily rate can be determined, correct to about three-hundredths of a second.

* * *

Variation of Latitude. FOR some years past, at Greenwich and other places, slight variations of latitude have been observed, but have usually been attributed to errors in calculation. Some determinations of the latitude of Cambridge, U.S., in 1884 and 1885, exhibited a variation so progressive as to suggest to several minds that they were not altogether errors. Mr. S. C. Chandler, in the *Astronomical Journal*, No. 248, deals with this question, and finds the minimum latitude to have been on September 1st, 1884, which showed a variation of about 0″·7, with a maximum, which occurred May 1st, 1885. So that, after all, latitude is not that fixed line we were formerly taught to believe. We might, however, remark that the hypothesis of the variation of latitude has frequently been resorted to to account for some of the climatic changes that have taken place in by-gone times.

* * *

Lead Adhering to Iron. THE impossibility of getting lead to adhere to iron without the aid of tin is said to have been completely overcome by an ingenious process, the details of which are as follows:—The plate or other article to be coated is first "pickled" in a bath to remove scale, a mild current of electricity sent through the liquid increasing the rapidity of its action by one-third. From this bath the article is, as usual, passed into another of lime-water to neutralise the acid, and thence into a third of clear water. Next it is immersed in a neutral solution of zinc and stannic chlorides, obtained by dissolving granulated zinc and tin in hydrochloric acid. From this bath it passes into a drying chamber heated by steam, which protects the plate from oxidation. Finally, when dried, the article is dipped in a bath of molten lead, from which it emerges coated with a very thin but uniform layer of that metal. The ductility and strength of the iron are not diminished by this process, and a plate can be bent and closed and again opened out without breaking the coating.

* * *

Warm your Room and Light your House. A FRENCHMAN has invented a stove, the wall of which is composed of upwards of a thousand thermo-electric pairs. When the stove is heated, either by gas or coke, a thermo-electric current is generated sufficient to charge an accumulator and drive a number of ten-candle power lamps. When shall we learn to utilize the forces which, to all intents and purposes, are lost in everyday life?

The Artistic Treatment of Jewel and Address-Caskets.

BY J. WILLIAM TONKS.

A Paper read before the Society of Arts.

(*Concluded from page* 226.)

We are told of the immense number of caskets of great value and beauty, produced by the Limoges enamellers, as early as the 11th, 12th, and 13th centuries. I have before referred to the ecclesiastical ones, but for the lay caskets I fear we must go to a later period. The example from South Kensington, of uncertain date, illustrates the style (1440-'55). It is oblong, ebony and gold, with five enamel painted plaques, of the modern Limoges type, which I need not further describe. The charming little silver box, of classic type, lent me by Mr. Camden Piercy, has a series of enamelled panels of Roman subjects, probably of a not much later period; while a silver open-work box, from the same collection, may carry us to the 18th century. We then come to the time of the Battersea enamels. Caskets, painted in delicate colors, with views, flowers, fruit, and foliage, are not infrequent in collections of this ware.

A notice of caskets would be seriously incomplete did it not refer to the famous ivory and metal workers of the far East. Arabia, Persia, and India have been so long famed for their productions, that there must be many of the highest lessons to be gained by a study of what the wrecks of time have left us. Firstly, the Arabic motive seems quite different from the European. The box is of metal, damascened; it is quadrilateral in plan, with sides sloping towards the top and sloping lid, the feet being in line with the box. A very precious example is at South Kensington (459-1873). It is in brass, covered with silver plates, chased with foliage, birds, and human-headed lions, inlaid with gold, also with geometric designs and Arabic inscriptions, carried out in superb style and finish. It has silver chains to support the lid when open, and Mr. C. Purdon Clarke considers it is Mosuli work, perhaps as early as the 13th century.

Modern Persian work reverts to the oblong box, as a rule. A box with falling front and fittings, as a cabinet (1090-'70), is richly inlaid on wood, after the Persian manner, with figures, animals, and foliage, the materials being vari-colored pieces of ivory and brass wire. A more ambitious box, probably dating from the commencement of the present century, and covered with Shiraz mosaic, the lid being brass, and having a border pierced and engraved with figures and Persian inscription, is inlaid charmingly with silver, and prominent lines of border are decorated with turquoise and garnet.

I learn from my friend, Mr. C. Purdon Clarke, who has given so much study to Oriental art industries, that the usual jewel-box in India is circular, carved and decorated, in which, also, perfumes and other toilet requisites are kept. As to the ancient Indian caskets, one of the best examples we have (8495-'63), and which I am fortunately able to show, is curiously related, in shape and character, to the ancient Byzantine one, to which I have already referred. It is ivory, oblong with pent-house lid, and an ebony slab, which is an ugly late edition. Like the former one, it is constructed with bold ornamental divisions, the plaques of ivory between being very boldly carved with grotesque human figures, curiously squeezed into the panels. The nails are shown with commendable frankness, and the two caskets are well worth studying together.

A modern Cingalese casket (38-'68) is again, with its arched top, curiously related in shape to the ancient Italian *casone*. The ivory openwork ornament is, however, very refined and harmonious, showing against the darker wood background in a very interesting manner. The carved monsters and foliage appear to betray an European influence, but the treatment is all that need be desired.

After roaming among historic records, and reviewing from the fragments that remain to us the art work of so many nations, it is a confession that one may perhaps make with some equanimity, that the address casket, strictly such, may be styled a feature peculiarly English. After some little research into the habits of the past, it is noteworthy that history seems eloquently silent as to a custom of presenting addresses in a box of some precious material or artistic construction. I was especially interested, in 1878, in examining the wonderful collection of ancient art treasures in the halls of the Trocadero at Paris. There were many superb specimens of caskets, but none that appeared specially designed to enclose addresses. We must not forget the wholesale destruction of art treasures by Louis XIV. at the latter part of his long wars against the Allies, nor the melting down by Louis XVI. of the contents of the treasury of St. Denis, which M. Philippe Burty describes as a calamity for art, as great as that of the burning of the Alexandrian Library was for literature. Still the fact remains, and it is a singular one. As a member of the Jury at Paris, in 1889, I had special facilities for examining the goldsmiths' work, in what was perhaps the finest Exposition of modern work the world has yet seen. But in that display I do not remember a single Continental example of a casket produced to receive an address. So far, then, we have a claim to believe that the system is of English origin.

The custom of bestowing the freedom of a city is of very ancient date, and I may be excused from giving details of it here. This freedom, usually obtained by service, was given on a parchment certificate, signed by the chief magistrate, and enclosed, usually, in a cylindrical box of boxwood, much after the style of a needle case, in which it would closely fit when rolled. But when a city became rich and powerful it was in a position to confer distinction upon men who had deserved well of their country, by offering to them the honorary freedom, and enrolling their names on the list of its citizens. The occasion was one of great ceremony, and it would naturally be felt that the ordinary box-wood "pyxis" would be quite inadequate for the purpose. So a more elaborate box was provided, which has gradually developed into the modern address casket. The city of London appears to have set the example in this respect; but it is unfortunate that its records are so meagre, and that early tabulated accounts have been destroyed. Further research may bring to light much important information, but a systematic statement in the Chamberlain's office commences with the year 1740. From this, it is clear that the practice of giving the honorory freedom of the City to eminent persons was in full swing, as also the custom of enclosing it in a gold casket. Thus, in 1740, Vice-Admiral Vernon was presented with the honorary freedom in a gold box, after the victory of Portobello. William Duke of Cumberland had a similar distinction, after the defeat of the rebels in 1745; and William Pitt, afterwards Earl of Chatham, in 1757, at the close of his first short administration. The Right Hon. R. B. Legge was bracketed with Mr. Pitt for a similar honor; and so the list goes on at regular intervals. In 1767, Christian King of Denmark was singled out, on a visit to this country; and the gold casket is noted as having cost 200 guineas, a much larger sum, relatively, in those days than it would be esteemed now. Rear-Admiral Rodney received a gold box from the City in 1780, on returning from his famous victory; and, in latter days, Nelson and Wellington accepted these marks of respect and admiration from the City. But we get from the records the mere statement of the fact, and the money value of the gold caskets, with no description that would enable us to form an idea of their respective artistic merits.

There is one interesting fact in connection with these early address caskets which must not be omitted here. Charles Dibdin, the famous song writer, was, at the date at which we have arrived, in the vigour of his age, and near the summit of his reputation. We all remember the famous couplet in one of his patriotic odes—

> Our ships are made of oak,
> And hearts of oak our men.

Now, I must leave it to the learned to determine whether, in some one of the 1,400 songs this prolific writer produced, the phrase "hearts of oak" had occurred previous to the year 1779. But in that year, curiously enough, there was presented to Sir Augustus Keppel the first "heart of oak" box, embellished with gold. Whether the custom gave rise to the song, or the song to the custom, I have not been able to ascertain. But the custom became general, so far as the City of London was concerned, and continued for some sixty years. I have seen one of these "heart of oak" boxes. It was of a fanciful rococo shape, about the size of a club snuff-box—in fact, it was lined with burnished gold, and so closely fitted to close air-tight, that it would well have served the purpose. The wood was of that delicate rich brown color, finely grained, characteristic of the heart of the oak, and which does not seriously darken in a century. The lid was covered with richly-carved rococo scrolls, the arms of the recipient in centre, and at sides were military trophies suited to the presentation.

In coming now to modern times, I am reminded of the fact that the reason why Chairs of Modern History are not more largely founded at our Universities, is because of the risk that the professor's views of recent events may be largely colored by his political predilections. It is evident that similar risks are run by one who dilates on modern industrial art. Should he adopt a tone of caustic censure, he is liable to be reminded of Lord Beaconsfield's famous aphorism, that "Critics are persons who have failed in literature or art." If, on the other hand, he should indulge in exuberant praise of the objects under review, he may be asked the question "Who are your friends?" I must therefore crave your indulgence while I endeavor, on this subject, to steer between Scylla and Charybdis, simply premising that the examples have been drawn from as wide a field as possible. I can deal with but a few pieces; it is only safe to speak of those of which one has some knowledge, and I propose to suggest a few lines of thought for your consideration, rather than to set down a hard and fast dictum of praise or blame.

A casket presented to the Rev. T. Raffles, of Liverpool, after a pastorate of fifty years in that city, and exhibited by Messrs. Howell and James, at London, in 1862, has refinement of form and dignity of expression. It was designed by Mr. F. M. Miller, professor of sculpture at South Kensington. A much later one, presented to Sir Frederick now Lord Roberts, after his remarkable march from Cabul to Candahar, was also produced by Messrs. Howell and James. It was in gold, oblong, with arched top, after the style of the Italian *coffret*, and the design, for which Mr. T. Buxton Morrish was largely responsible, included enamels and *repoussé* work, all having a strict regard to the subject. The handle at top, of constructive form, had entwined within it the initials of the General; his various decorations were arranged in a panel on obverse of lid, also in *champlevé* enamel. Coats-of-arms, enamelled and enamel painted, occupied obverse and reverse of casket, while the ends were decorated respectively with views of the citadels of Cabul and Candahar; the architectural features treated with enamel lines after the mediæval manner. Trophies of Afghan and English arms, with suggestive symbols and Latin mottoes, completed the decoration, while at the feet, of sound construction, dolphins were sporting. Mr. J. W. Benson had a distinct success in the casket made by him, as the City presentation to Sir Henry Bessemer. The figure of Invention, with the steel converter one side and pigs of crude iron on the other, is sufficiently suggestive. The box is gold, a rich Renaissance, with bold decoration and twisted steel columns, while the plinth of steel, a *tour-de-force* of the inventor, is certainly realistic.

At this stage it will be convenient to refer to caskets which have ostensibly taken a distinct architectural character. The Italians of the seventeenth century were especially famous for caskets in iron, damascened in gold and silver. These caskets, of which a fine example is in the collection of Earl Cadogan, partook of the character of the buildings of the period, being marked into divisions by pilasters or columns, having architectural mouldings and panels like window frames, so that the enamelled centres might almost serve for the stained glass. This style has reappeared in modern times, chiefly in caskets of a classical character. A notable example of this was the casket presented by the City to Mr. Gladstone, in 1882, and manufactured by the Goldsmiths' and Silversmiths' Company, of Regent Street. The severe lines of the box were suggested by the classic tastes of the then Premier; the centre trophy, of Mr. Gladstone's heraldic bearings, was approached on either side by a series of figures in gold against a field of blue enamel, which gave unity and symbolic value to the attributes represented. Four figures beyond the casket expressed qualities held to be exemplified in Mr. Gladstone's statesmanship, and the lid was elaborately decorated by emblems, in which the bust of Homer and the Lamp of Learning were conspicuous. *Punch* probably served the makers most, in regard to this casket, with humorous description, full of point, one of his sallies being to the effect that the Tuscan columns at the sides represented the columns led against the Government of the day by Mr. Parnell on the one side, and Lord Randolph Churchill on the other.

An important casket of this class was produced by Messrs. Elkington, as a gift from the city of Athens to the Crown Prince of Greece, on the occasion of the attainment of his majority. It was designed under the direction of his Excellency M. Gennadius, Greek Minister at the Court of St. James. As a classic purist, he desired that it should represent the spirit of the famous city, and this was done with scrupulous accuracy of detail. On the lid are statuettes, the prince himself in centre. On the right, the city of Athens presenting the address, while Pallas Athenæ, panoplied as of old, looks on approvingly. Altars of science and art respectively are at each side of the group. The "labarum" of Constantine is seen in front, with the arms of the ancient city. The box itself, having Corinthian columns at corners and ends, has a remarkable bas-relief. In centre, beneath a classic doorway, round which is bending a growing laurel in delicate compliment, the prince is seated. On either hand assemble the various provinces of Greece with messages of congratulation. Theseus, Achilles, Constantine, and Alexander each play their part in the design; and the surface, diversified with gold, silver, and rich enamels, gives the whole an effect of pure and balanced color. Another casket, also by Messrs. Elkington, presented to the prince—this one by Greek residents in England—yet more emphasises the architectural idea. The figure work is elaborate and appropriate; not the least so being the panel where the Goddess of Wisdom, disguised as Mentor, is instructing the young prince in the duties of life and the art of wise admistration. I must pass on to a casket from the same house, designed by an architect of Wigan, the motive being suggested by the ancient Town-house, supported on columns, a specimen of Early English construction. The arrangement is ingenious and decorative, the summit being crowned by a figure of the borough progress—based on coal—the miner's lamp indicating one stage, and the electric light the other.

In the year of Jubilee of Her Majesty's reign many caskets were presented, some retaining the architectural motive, while others were marked by much boldness and freedom. The one from the borough of Leamington, supplied by Mr. T. R. Roberts, in ivory and gold, was oblong in form, graceful in line, and the ornament agreeably disposed. A casket manufactured by Messrs. T. and J. Bragg, and presented to Mr. Peel, son of Sir Robert Peel, on the attainment of his majority in 1888, is a typical instance of an oblong box of ivory, decorated with gold and silver, following, in many respects, the traditions of the Middle Ages. The lid, rising in a gentle curve, is surmounted by a boldly modelled and enamelled blazon of the arms of the Peel and Tweeddale families; at the sides are enamelled portraits of Sir Robert and Lady Peel, the father and mother of the recipient. Around central monograms, on obverse and reverse of lid, are *repoussé* panels, referring to agriculture, arts, and commerce. The motive of the design of the box is the family motto, "By Industry," and as a model by which it is gently suggested that the young man should shape his future career, a statuette of the great Sir Robert Peel, reduced from the statue in the market-place at Tamworth, is placed in a canopied arch in centre of casket. On either side of this, in gold frames, are enamel painted views—one of old Drayton Manor, the early home of the family, the other of the present mansion. The Tamworth arms and other relative subjects decorate remaining sides of the box; and the statuette of the great Prime Minister is saved from apparent isolation by four other figures to same scale, occupying corners of the casket, having reference respectively to agriculture, the industrial arts, and wise and just legislation. Another casket, in gold and enamels, upon a box of ivory, presented to the late Duchess of Sutherland by the ladies of Torquay after a lengthened visit of the Princess of Wales and her three daughters to that charming place, was also manufactured by Messrs. T. and J. Bragg. It was oval, with arched ends, the lid raised up in several lines, the Princess's coronet surmounting it. The treatment was light and graceful, the leading features being four portraits, enamel painted on gold, of the Princess and her daughters, one forming the central motive on each side of the box.

We must not fail to describe the superb casket presented last year by the city to the Emperor of Germany, and manufactured by Messrs. Mappin Brothers. If anyone desired to form an idea of the extent to which the casket conception had developed during the past hundred years, it would be gathered by a comparison of the heart of oak box, or club snuff-box of a century ago, with this fine example of goldsmith's work, which I will shortly describe. The style is that of the free Gothic of the Guildhall itself, which is adopted with brilliant effect, the open arches and tracery being shown against royal blue enamel, while the continuous borders and deep panels give a richness of color quite remarkable. The shape is oblong, with semicircular bays at either end; the upper moulding is supported by a band of Gothic capital enrichment, and is crowned with a royal coronet border, similar to ancient boxes just referred to. A splendid feature at the base is a series of blazoned shields and ribands, giving the arms and names in a series of all the different kingdoms and duchies included in the German empire. Imperial eagles appear over the coronet rim; the arms of Germany occupy the centre; four emblematic figures in *repoussé* express the wishes of the city for the peace and progress of that empire, in fraternal union with England, and two interesting events connecting the two nations are displayed on the semicircular bays. One is the marriage of our Queen with the late Prince Albert; the other the marriage of the late Emperor Frederick to the then Princess Royal of England. On the lid is the seated figure of the City of London; her mural crown being decorated with the wings of the dragon crest, a wealth of merchandise about her, the *caduceus* of commerce held aloft in the right hand, the City shield supporting her left.

In closing a description of various classes of address caskets, with which I hope I have not wearied you, let me remark that jewel caskets, as such, have followed much the same lines of change. The forms have become richer, bolder, and less conventional, not seldom, I fear, trespassing beyond the limits of the true rules of art. In gold, silver, damascened work, as well as in less costly materials, they vary so much that it is difficult to fix a modern classification. We may take two typical ones, both by the Messrs. Elkington. One, by Mr. Willms, is severe, classic in form, oblong, with pilasters at angles, and bas-relief in *repoussé*. One side represents a wedding procession, another the Athenian marriage ceremony. The doves of Venus and figure of Cupid on the lid, with the torch of Hymen, sufficiently indicate the object of the casket to be that of a bridal gift. The other low, long box, designed and modelled by the late M. Morel Ladeuil, is charmingly unconventional and free in treatment; while the placing of the figures to occupy the corners suggests the master hand.

I have finished my parable. It is a long stretch, from the first historic box overlaid with gold and containing sacred symbols, to the gold casket offered to an emperor by the richest city in the world. There are many intervening stages, all of them interesting; although the most precious examples have been destroyed. The lessons they teach us are of patient art industry and laborious achievement. The works of the past bear no marks of haste upon them; their minute surface detail always speaks of leisure and reflection. In our modern days we have changed all that. Design, model, finished work, all must be completed in hot haste. What wonder if, in this rush and hurry, we lose something and forget much. The patient, loving care with which the artist of old could dwell on the minute parts of his design, the thoroughness with which he could adapt one part to another in those old days, gave him advantages which we are liable to miss in modern work. Knowing, as I do, the conditions under which large and elaborate presentation pieces are now got out, I do not marvel that they are not better; I often am surprised that they come through the race against time so well as they do. Partly for this reason, and still more because of the lack of art education among our workpeople, there is much modern work in this class which I prefer not to name. Pieces in which the decoration seems thrown together by accident, and in which different styles jostle each other, like fares in an omnibus—blatant vulgarities, that sin against every law of taste, and which are only remarkable for the unblushing audacity with which they violate the canons of art. These, unhappily, are the products of 19th century competition.

Let us draw a veil over these infirmities, so far as the past is concerned, but let us, each in our own sphere, do something to provide against their prevalence in the future. *First, let us educate our workmen*, that they may be able to give the loving, artistic touch, and to afford the delicate sense of finish, which must add the final grace to the conception of the designer. Next, let us remember that a work of art must have time for its successful production. It is all very well for the contractor to tell us of five railway bridges being built in a fortnight. This is only a question as to how many men are needed to lay so many bricks, to cut and place so much stone. But, if you desire a work of art, and not a mere contract piece of no art value, you must give time for the hand, and heart, and brain of the artist to do their best upon it.

Again I would lift my voice against the miserable system of competition, which makes of what ought to be a work of art a mere race for advertising purposes, and often means a heavy fine upon the successful competitor for the privilege of putting his name to the piece. It is wonderful, under the conditions which often prevail, that great houses will be so public-spirited as to give so much real art at their own cost in important presentations; but surely it is not a healthy sign that they should be placed in such a position.

Lastly, may I add that it is well to guard against the rush for mere novelty of form in these caskets. The rage to secure a new shape often leads to most barbarous results, and while, I trust, I am the last to desire a dull and barren uniformity, I would remind my hearers that eccentricity is not always beauty, and that many a design which possessed excellent features has been incurably marred by a painful striving after some unheard-of effect. A beautiful design, whether of a casket or anything else, always has the virtue of repose. It appears brought together without effort, and you feel that you cannot take any part or ornament away without injuring the effect. Some caskets I have seen have hardly a single ornament which has a sustained attachment, and we might say of its decoration, remove it altogether. Unity of form and harmony of color are most essential; and when to these are joined a sound conception, just construction, and artistic treatment of detail, we have the jewel and address casket worthy of the knowledge and executive ability which, undoubtedly, exist among us.

With these remarks, and trusting to be favored with the views of a society which numbers among its members so many distinguished artists and experienced critics on a subject which is deeply interesting to me, I will now leave the paper in your hands.

In and Out the Courts.

Loss of Messrs. Elkington's Action.—This was an action in the Chancery Division of the High Court of Justice against Tivoli, a director in the Restaurant Company that bears his name, for goods supplied, amounting to £1,307; for which the company gave two acceptances, one for £600 and another for £107, promising to deliver further debentures for the remaining £600. The £600 acceptance was dishonored; subsequently they received £407. In November last the company was wound up, and it was then found they had never issued the debentures, although plaintiffs had parted with the goods upon the representations of Tivoli in regard to them. Mr. Justice Romer said he failed to see how defendant could be made liable, and dismissed the action, with costs.

How Appro. Goods are Treated.—Lieut. Leslie of the Royal Sussex Regiment recently received a packet of diamond and opal pins, valued at £80 or £90, at Chichester Barracks, which when done with were packed up and put into the *kitchen* connected with the officers' mess. When post time came, not at all surprising to say, they had disappeared. It turned out that this kitchen was so well guarded that a tramp laborer was able to walk in and take them. Subsequently the laborer left one as a deposit for a pickaxe and shovel at an ironmonger's, which led to his arrest. He was found employment on the mill for three months.

Extensive Robbery and Sad Sequel.—While Mr. M. J. Goldsmid, a well-known jeweler of Vittoria Street, Birmingham, was engaged in showing his goods to a Deansgate, Manchester, jeweler on the 5th ult., one of the sample bags, containing £2,500 worth of stock, was stolen from a handcart in charge of a railway porter, who, instead of maintaining his post at the cart, was abstractedly gazing into the window. The police were at once communicated with, and every effort made to obtain some clue, but entirely without success. It was therefore arranged to advertise a reward, and the bill was accordingly got out. Mr. Goldsmid was naturally upset, although, according to several people who saw him, not unnaturally so. In the course of the afternoon he visited a chemist's shop and bought an ounce of cyanide of potassium, stating that he required it for cleaning his stock. The chemist, however, employed all precautions. and made Mr. Goldsmid establish his identity with the card he gave. Next morning, however, sad to say, he was found dead in his bed, with a glass standing near, in which was a solution of cyanide. At the inquest it was suggested that a post-mortem examination should be made to see if he met with his death from poison.

Recovery of Lost Waterbury Watches.—Attempts were recently made to obtain money upon part of the proceeds of this robbery, but whilst the applicant, William Brackman, of 28, Amhurst Road, Hackney, was being detained, a constable was sent for who took him into custody. 691 of the watches have been recovered.

Loss of Messrs. Hukin and Heath's Action.—For many years this old firm have been in the habit of supplying the committee of the Licensed Victuallers' Protection Society, Queen Victoria Street, with the testimonials to their outgoing chairman. In 1888 and 1889 the recipients called at their establishment and selected the goods as usual, which were presented at St. James's Hall banquets, but these not being paid for, Messrs. Hukin and Heath resorted to law. It was, however, held that the invoice was made out in the name of the secretary, and that he therefore was responsible for the payment. A verdict in favor of the committee was returned. Moral—make out invoices to committees, not to secretaries.

Mr. Pyke's Compensation.—Mr. Pyke, of New Bond Street, recently brought an action against Mr. De W. Chapman, Cheesemonger, of Edgware Road, for injuries sustained by Mrs. Pyke on the 3rd of March, 1891, through the fall of a portion of the sun-blind outside defendant's shop, which struck Mrs. Pyke upon the head. Defence was "not liable, as the accident occurred in consequence of the violence of the wind." Verdict, £300 damages.

An Old Shoplifter Run Down.—G. W. Henry, *alias* Holmes, twenty-three, was recently run down. After entering the shop of Henry Hardt, 73, Commercial Road, a keeper-ring was missed, but the thief was traced to a neighbouring beershop and given into custody, with the ring still upon him. He was subsequently identified as being the perpetrator of numerous shopliftings, some of a very daring character.

Stealing by an Employé.—Alexander Anderson was recently convicted of stealing several silver articles, of the value of £5, from his employers, Josiah Thomas and Co., St. Augustine's Parade, Bristol, and sentenced to three months' hard labor. Up to the conviction, prisoner had borne a good character, and was in receipt of £3 a week. He, however, took the goods to a cabman, who bought them of him, and who was also committed to the same punishment for receiving with guilty knowledge.

A Bad Account.—Recently, at Edinburgh, John Young was sentenced to eighteen months' imprisonment for pawning goods while acting as agent. The charges included the embezzlement of eighty-eight watches, alberts, and other articles, the properties of S. Goldstone, Manchester; Ford, Galloway, and Co., Birmingham; and others.

Pawning a Customer's Watch.—Romanus Rhinsberg was recently committed at Rotherham to twenty-eight days' imprisonment for pawning a gold watch, valued at £10, entrusted to him to repair by his landlord. When apprehended at Leeds, whither he had fled, he protested that he would have redeemed it again.

The Right Sort of Policeman.—A constable at Leicester, recently seeing a man loitering about the premises of Mr. Winterhalder, Belvoir Street, watched at a distance, until he heard a smash; he then pounced upon the prisoner and took him into custody. A scuffle ensued, during which time prisoner threw away a quantity of jewelry.

Mr. Aronsberg's Robbery.—The man who has been brought up several times for this robbery was discharged the other day by the desire of the police. The magistrate, however, dwelt upon the strong suspicion which rested on him.

Never Try to Serve Two Customers at One Time.—The other evening, while Mr. John Ingram, of High Street, Cardiff, was selling a watch, another man came in and asked to have a worthless ring repaired. Taking the job of him, he left the watch on the counter. After the departure of the latter the watch was missing. Fortunately it turned out the man was not in his senses, and the watch was recovered; but it would have been just as easy for a thief to have done it.

Window Smashing at Cardiff.—Mr. H. B. Crouch, of St. Mary Street, Cardiff, recently had his window smashed much in the same way as those of Mr. J. W. Benson, simply because the man "felt miserable." The stipendiary, however, was inclined to take a much more lenient view of the matter than his brethren in London, and instead of punishing the rascal only bound him over to be of good behavior for six months!

Serious Fire at a Watchmaker's Shop.—The premises of Mr. Lionel Bury, Bassein Park Road, W., were recently burned out while the workpeople had gone out for the day.

Serious Charge against a Jeweler.—William Latham, City Road, Manchester, has been committed for trial upon the charge of receiving, with guilty knowledge, the witness being a convict. The charges are of too serious a nature to repeat until further evidence has been adduced.

The Gazette.

CAUTION.—*It must be distinctly understood that, in giving the Official Gazette information, we take official records as we find them, and accept no responsibility for inaccuracies, while as an almost invariable rule the facts will be found correct.*

Bankruptcy Record.

Bowman, Richard Thomas, Jeweler and Silversmith, 70, Goswell Road and Vernon House, Brixton Hill. Receiving Order: May 10. First Meeting: May 24. Public Examination: Bankruptcy Buildings, Carey Street, June 15.

Bowman, Arthur Hart, Jeweler and Silversmith, 472, Brixton Road, 15, Camberwell Road, The Limes, Tulse Hill, and 6, Broadway, Deptford. Receiving Order: May 10. First Meeting: May 24. Public Examination: Bankruptcy Buildings, Carey Street, June 15.

Bowman, Charles Samuel, Jeweler, London Road, Croydon. Receiving Order: May 12.

Bowman, Reginald, Jeweler, 291 and 293, late 193, Holloway Road. Receiving Order: May 10. First Meeting: May 24. Public Examination: Bankruptcy Buildings, Carey Street, June 15.

Heap, Thomas, Watchmaker and Jeweler, 3, Church Street, Barnoldswick. Receiving Order: May 9. First Meeting: May 24. Public Examination: County Court, Bradford, June 3.

Thompson, John, Watch Manufacturer, 75, Craven Street, Chapel Fields, Coventry. Receiving Order: May 5. Adjudication: May 6. First Meeting: May 24. Public Examination: May 30.

Wigston, David Jamieson, Watchmaker and Jeweler, 77, Castle Street, Carlisle. Receiving Order and Adjudication: May 5. First Meeting: May 25. Public Examination: May 25.

Yeatman, George Thomas, Jeweler, 15, Castle Street, Salisbury, Wilts. First Meeting: May 13. Public Examination: Council House, Salisbury, June 10.

Deeds of Arrangement.

Asscher, Izaac Joseph, Diamond Merchant, 16, Hatton Garden, E.C., and 149, Nieuwe Heerengracht, Amsterdam, Holland. Trustee: L. Hasluck, 17, Holborn Viaduct, E.C., C.A. Secured creditors, £16,600. Dated May 3; filed May 10; unsecured liabilities, £34,458; estimated net assets, £9,000.

List of Principal Creditors—

		£	s.	d.
Cohen, J., and Co.	London	2,305	0	0
Gervers, F. T.	,,	1,746	0	0
Litkie, N. A., and Co.	,,	7,310	0	0
Joseph Bros.	,,	5,498	0	0
Van Praag	,,	2,334	0	0
Wernher, Beit, and Co.	,,	3,858	0	0
Asscher, A.	Amsterdam	4,000	0	0
Asscher, J. J., Jun.	,,	350	0	0
Asscher, J. J., Sen.	,,	700	0	0
Jan Kol	,,	3,000	0	0
Snapper, —	,,	600	0	0
Swaab, —	,,	865	0	0
Van de Tong, L.	,,	600	0	0
Van de Tong, G.	,,	300	0	0
Dunkelsbuhler, A., and Co.		530	0	0

Fully Secured Creditors.

		£	s.	d.
Cohen, J., and Co.	London	3,200	0	0
Dunkelsbuhler, A., and Co.	,,	2,500	0	0
Wernher, Beit, and Co.	,,	7,400	0	0
Jan Kol	Amsterdam	3,500	0	0

Bernstein, Abraham, Watchmaker, Jeweler, 80, Sunbridge Road, and 113, Earl Street, formerly Manchester Road, Bradford. Trustee: H. Walker, 5, Waterloo Street, Birmingham, C.A. Dated May 11; filed May 13; unsecured liabilities, £479 4s. 11½d.; estimated net assets, £55.

List of Principal Creditors—

		£	s.	d.
Sucker, C., and Co.	London	21	17	4
Bridport Organ Co.	,,	22	10	0
Mojon, Manger, and Co.	,,	31	5	0
Lowenthal, L.	Berlin	28	1	7
Cox Bros.	Birmingham	102	0	0
Broham, Walter, and Co.	,,	16	0	0
Bolt, Addis, and Co.	,,	24	0	0
Moritz, Alfred and Co.	Dresden	68	7	11
Baker, John, and Co.	Sheffield	22	14	6

Bott, Edward Hardy, Watchmaker, Jeweler, 92, Granby Street, and 98, Laurel Road, Leicester. Trustees and Inspectors: G. G. Poppleton, Birmingham, C.A., and another. Deed of inspectorship with a view to payment of a composition of 12s. 6d. in the £, by three equal instalments, on July 29, and Nov. 29, 1892, and Mar. 29, 1893, secured by assignment upon trust to realise in default. Secured creditors, £36. Dated April 22; filed April 27; unsecured liabilities, £1,794 15s. 8d.; estimated net assets, £1,515.

Gardener, William Vallier, Watchmaker and Jeweler, Penny Street, and 35, Derwent Road, Lancaster. Trustees: J. Hothersall, Lancaster. Dated April 21; filed April 27; unsecured liabilities, £300; estimated net assets, £250.

List of Principal Creditors—

		£	s.	d.
Cohen, J., and Son	Birmingham	72	1	9
Collett and Co.	,,	54	2	0
Joseph and Co.	,,	24	8	9
Skinner, John	,,	14	7	3
Abrahams, Julius F.	Bradford	11	16	10
Bartlett, Rev. P.	Lancaster	18	0	0

Leaver, Charles, Jeweler, Gibraltar Street, Sheffield. Trustee: G. A. Knowles, 11, Union Street, Sheffield. Dated April 30; filed May 6; unsecured liabilities £265 8s.; estimated net assets, £89 17s. 10d.

List of Principal Creditors—

		£	s.	d.
Round, Samuel	Birmingham	94	0	0
Brooke, Brooke, and Co,	,,	33	3	0
Harris, Henry	,,	49	0	0
Sharp, Henry	,,	20	3	6

Maitland, John Martin, Watchmaker and Jeweler, 11 and 13, Brogden Street, Ulverston. Trustee: R. Casson, County Chambers, Ulverston, C.A. Dated April 26; filed May 2; unsecured liabilities, £128 19s. 3d.; estimated net assets, £100.

List of Principal Creditors—

		£	s.	d.
Hines, R., and Son	Birmingham	49	1	2
Cronzier and Mitchell	,,	25	2	0
Homer, A.	,,	10	7	9
Grundy, J. W.	Ulverston	24	0	0

Miller, Elias, Jeweler, 15, Elsworth Street, Cheetham, Manchester. Composition of 6s. 8d. in the £ by five equal instalments, at four, six, nine, twelve and 15 months, from May 4, 1892, last four instalments secured by sureties. Dated May 4; filed May 11; unsecured liabilities, £581 18s. 1d.; estimated net assets, £151 1s. 3d.

List of Principal Creditors—

		£	s.	d.
Britton, B. H., and Sons	Birmingham	56	10	11
Allday, H., and Sons	,,	25	0	0
Ahronsberg Bros.	,,	49	0	0
Kinder, Thomas	Coventry	184	17	0
Hawley, John, and Son	,,	128	12	6
Wright, L. J., and Co.	Manchester	98	16	0

Notices to Creditors.

Blakemore, Hugh Henry, Jeweler, 84, Lansdowne Street, Winson Green, and 10, Tenby Street, Birmingham, and Adelaide Place, Blackpool. Trustee: A. Edwards, Bennett's Hill, Birmingham, C.A.—Appointed April 14.

Charlton, William, Watchmaker and Jeweler, 47, High Street, Ashford. Proofs by May 17. Trustee: Official Receiver, Canterbury.

Cohen, Henry, Jewelers' Factor, 375, New Cross Road. Proofs by May 19. Trustee: Official Receiver, 24, Railway Approach, London Bridge, S.E.

Kaiser, Mary, Optician, 59, The Parade, Leamington. Supplemental dividend of 2s. 3½d. (4s. 10d. on new proof), at Official Receiver's, Coventry. April 12.

Kleiser, Anthony, Watch and Clock Maker, 55, Oxford Road, Reading. Proofs by May 11. Trustee: Official Receiver, 95, Temple Chambers, Temple Avenue, London.

Kurman, Israel Moses, Jeweler, 365, Commercial Road, 106, Barking Road, and 52, Rye Lane, Peckham, S.E. Trustee released: Mar. 21.

Lesser, Solomon, Jeweler, 3, Alfred Place, Bedford Square, late 19, Frith Street, Soho, and 54, Shaftesbury Avenue. Discharge granted (Feb. 26, 1892), as from Feb. 26, 1894.

Moore, John Thomas, Watchmaker and Jeweler, 120, Preston New Road, and 19, Northgate, Blackburn. Proofs by June 3. Trustee: Official Receiver, Preston.

Peacock, Arthur James, Silversmith and Jeweler (trading as James Peacock), 42 and 64, New Oxford Street. Trustee: L. Hasluck, 17, Holborn Viaduct, E.C. Appointed April 1.

Strawbaum, Maurice, Jeweler, 14, Reservoir Street, Reservoir Road, Edgbaston, and 33, Tenby Street, Birmingham. Proofs by May 23. Trustee: Official Receiver, Birmingham.

Solomon, Levi, Jeweler, 29 and 29½ Corn Market Street, Oxford. Second and final dividend of 8d. at Official Receiver's, Oxford, May 20.

Williams, William Courtney Page (trading as Wordley and Co.), Jeweler, 56, Lord Street, Liverpool, and Rushmoor, Plenkett Road, Liscard. Trustee: F. Harpisty, 71, Lord Street, Liverpool. Appointed April 9.

Dissolutions of Partnerships.

Aaronson and Steinart, Dealers in Jewelry, 198, Cheetham Hill Road, Cheetham, Manchester. April 20. Debts by George Aaronson. Mark Steinart continues.

Allen Brothers, Jewelers and Silversmiths, 133, Warstone Lane, Birmingham. May 2. Debts by George Robert Allen and Richard Hooper Allen, who continue under the same style.

Ambrose Brothers, Watchmakers and Jewelers, 3, Quiet Street, Bath. April 30. Debts by Harry Ambrose.

Batson, J., and Sons, Silversmiths, 42 and 43, Brewer Street, Golden Square, St. James', Westminster. Mar. 25. Debts by Henry John Batson and Albert Edward Batson, who continue under the same style.

Levi, Joseph and Company, Wholesale Opticians, 40, Furnival Street, and 2, Dyer's Buildings, Holborn. Jan. 1. Debts by Myer Lewis Isaacs, who continues.

Zamek and Edelshain, Watchmakers and Jewelers, Bridge Street, Aberdeen. May 5th.

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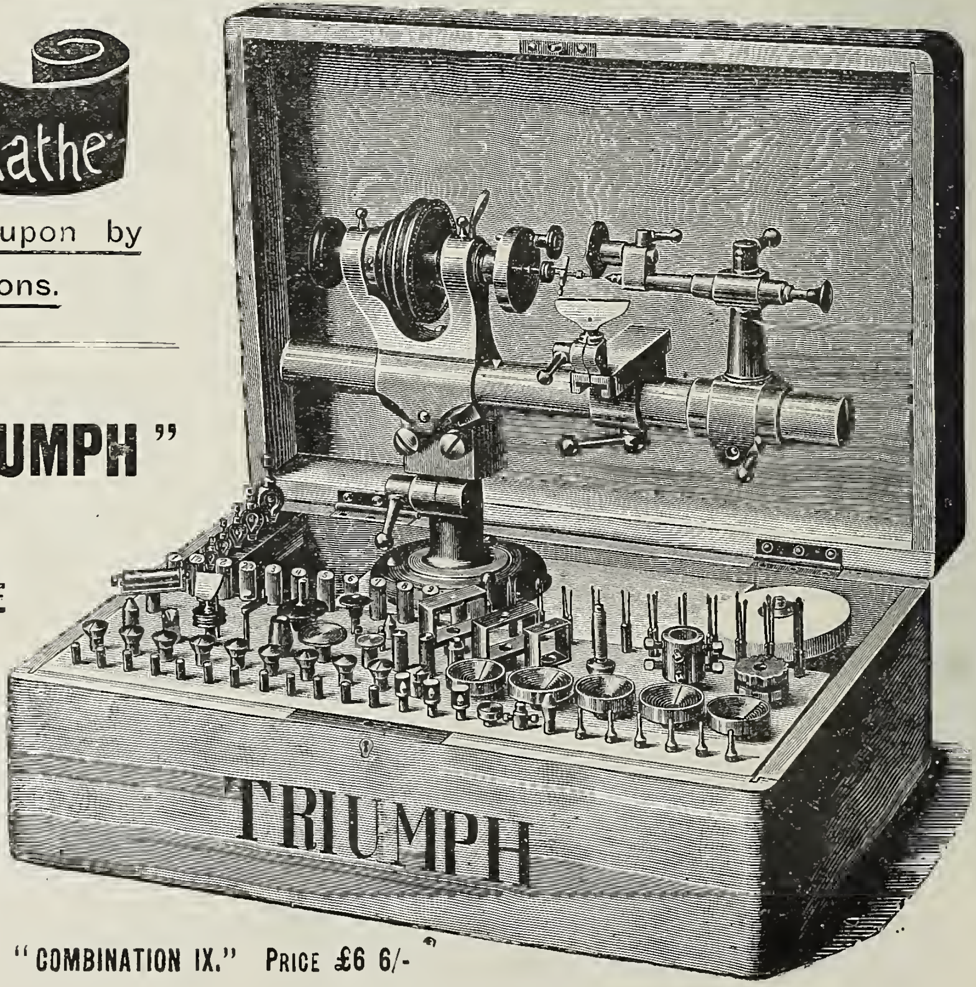

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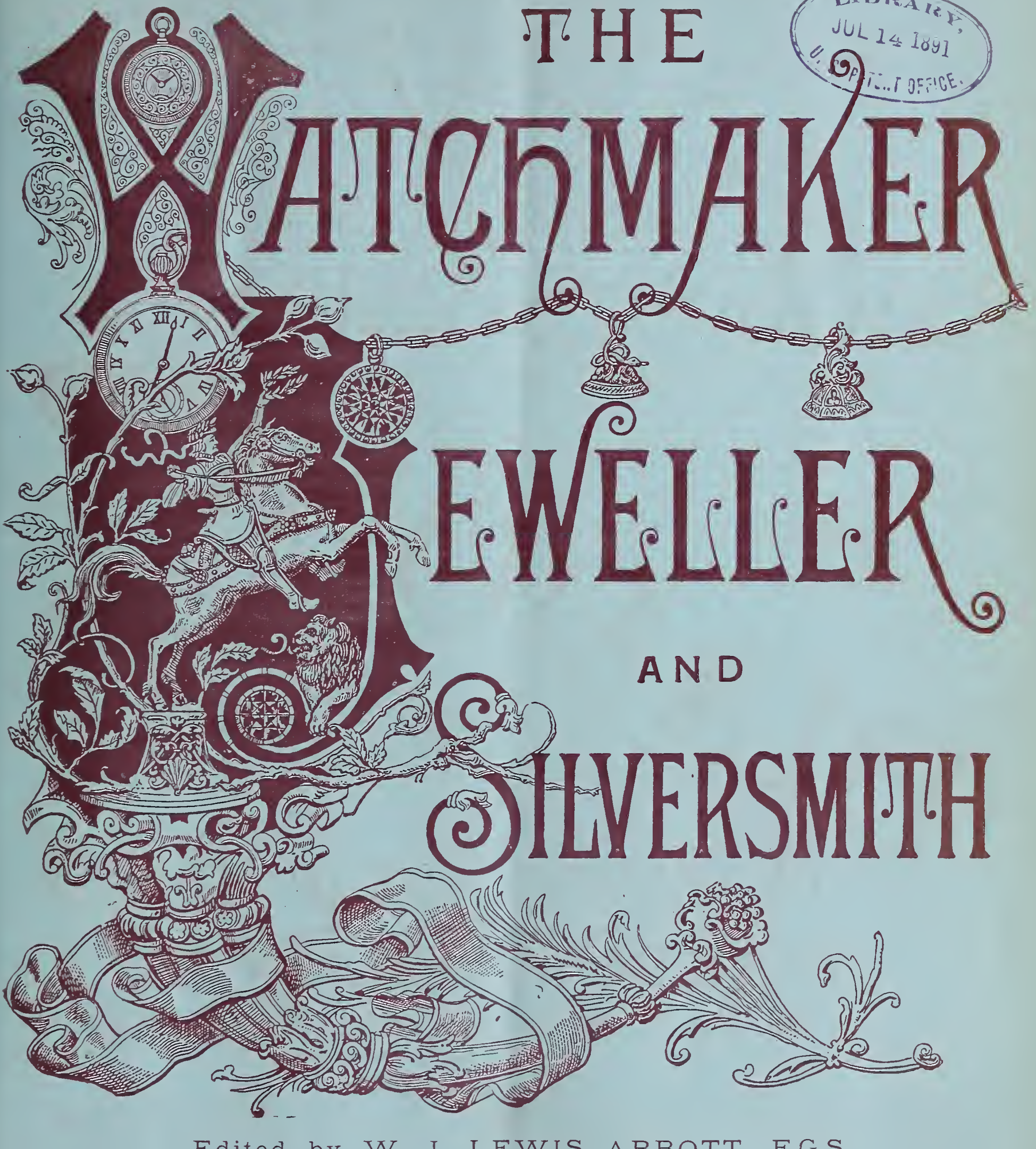

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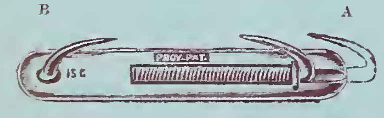

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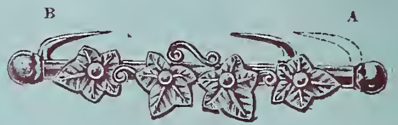

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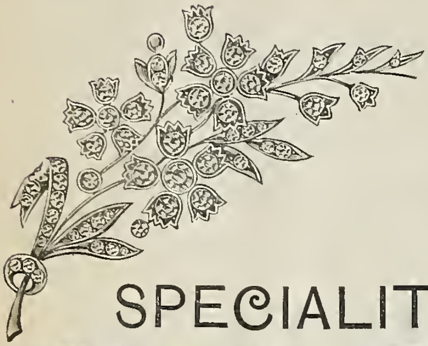

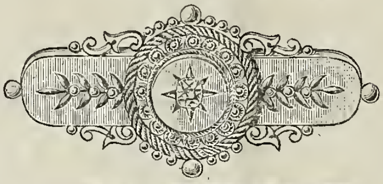

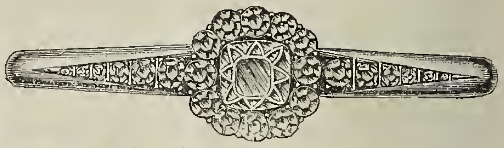

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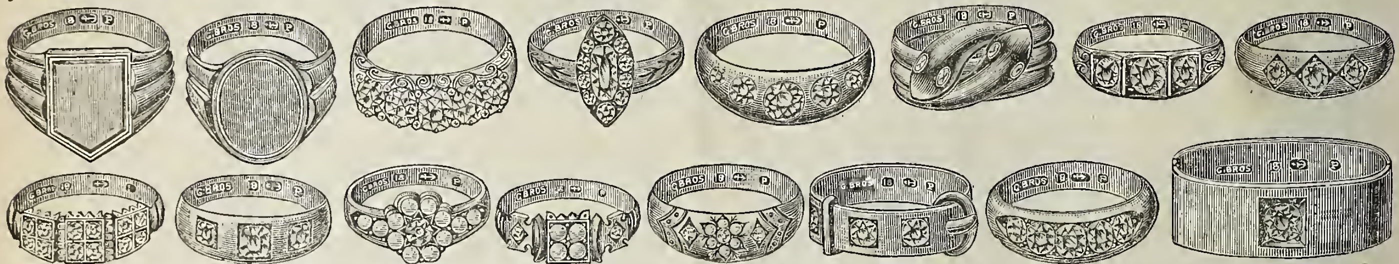

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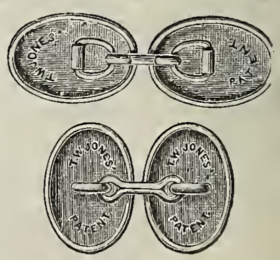

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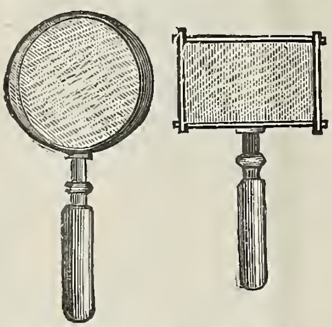

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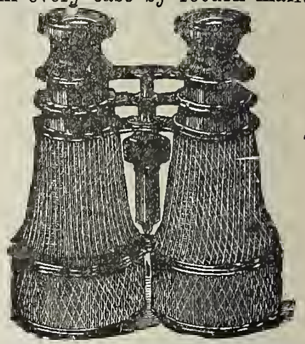

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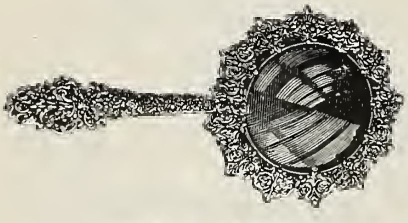

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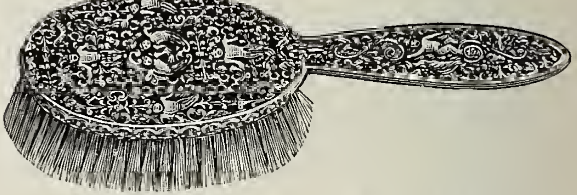
With Silver and Plated Mounts.



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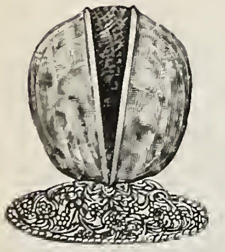

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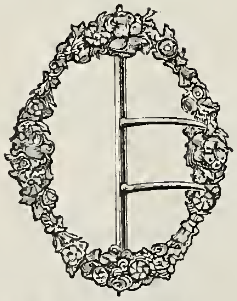

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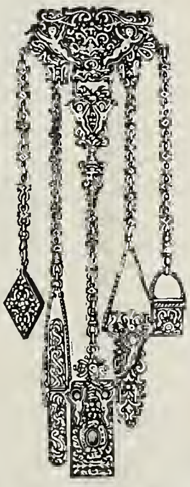

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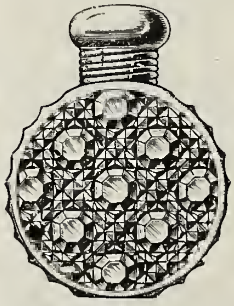

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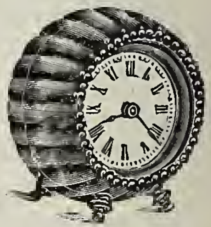

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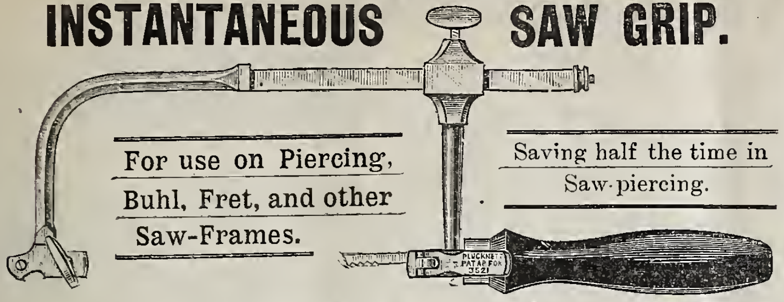

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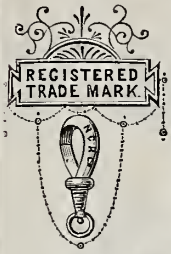
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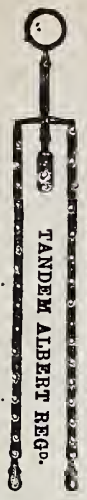
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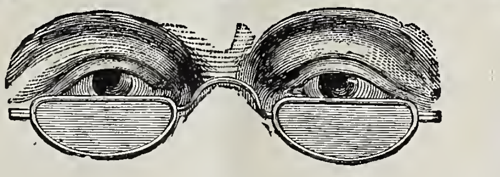

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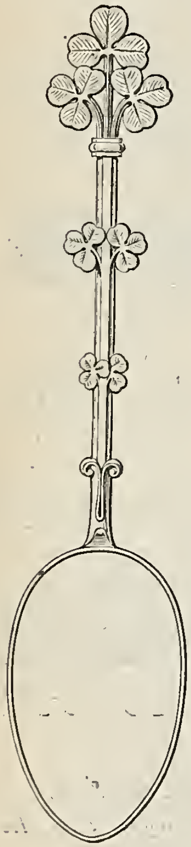
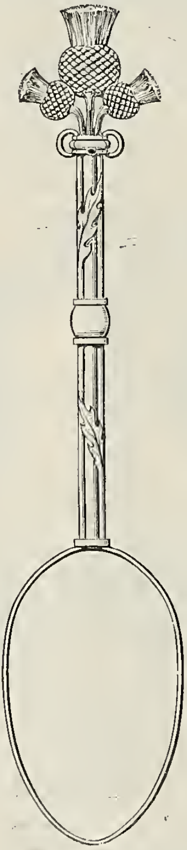
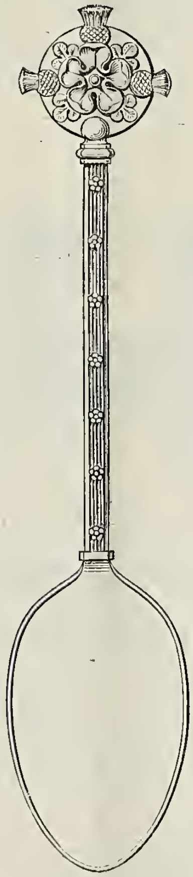
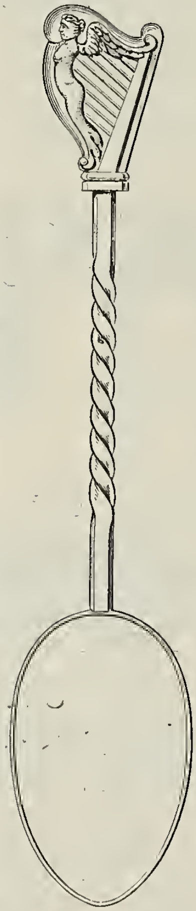
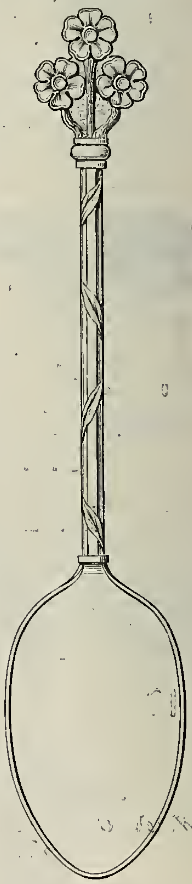

SHAMROCK.


THISTLE.


COMBINATION.


HARP.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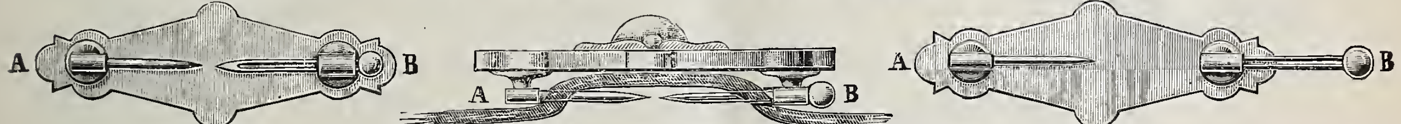

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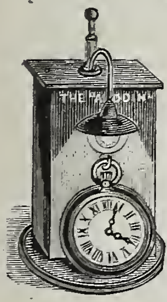

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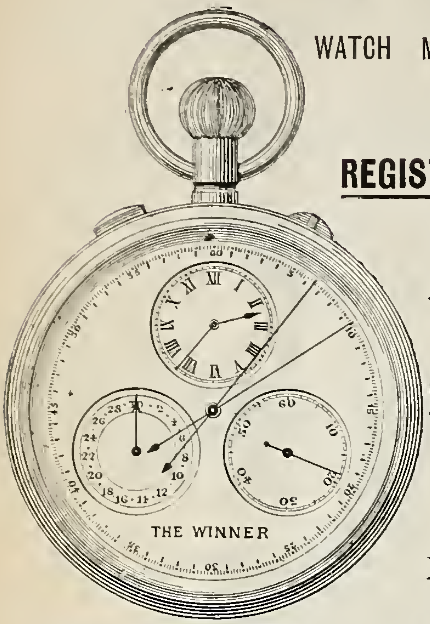

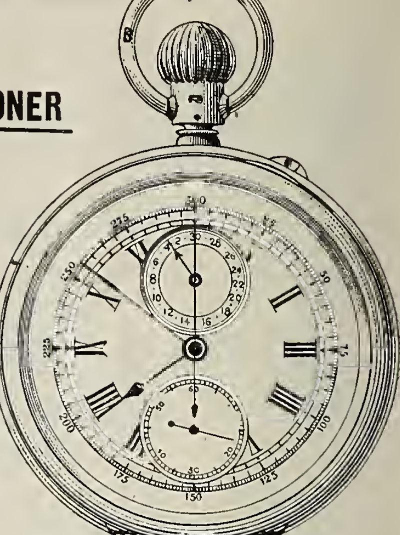

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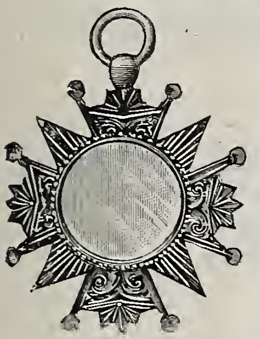

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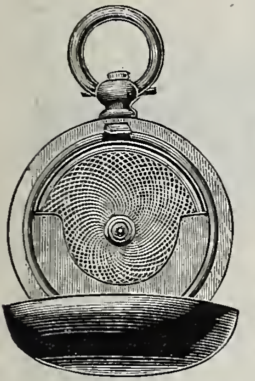

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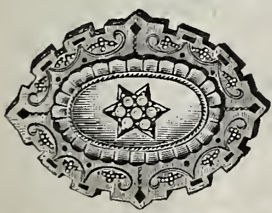

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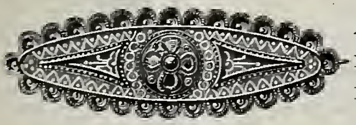
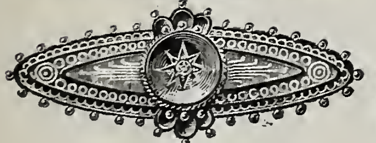
All Gold .. **12/6**
Pearl Cluster Centre, **18/-**
Single Diamond Centre **23/-**



No. 2920.
All Gold. **12/6**
Pearl, **15 6**
Diamond **22/6**



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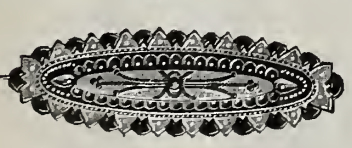
All Gold, **13/6**
Pearl Single, **16/6**
Pearl Clstr., **18/6**
Diamond, **23/6**



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All Gold, **14/-**
Pearl and Ruby, **17/6**
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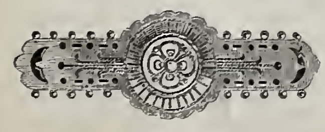

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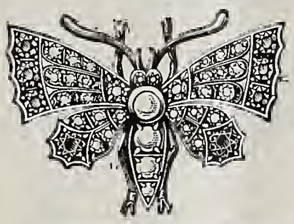

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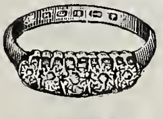
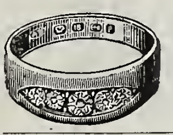


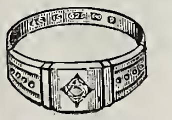
Ladies' Half-hoop Gem Rings—All Diamond, 30/0 to 100/0; Diamond and Ruby 25/0 to 100/0.



Ladies' Boat Set. Diamond Rings at all prices.

Ladies' Diamond and Gem Set Rings

of every other description, 15/- to £25.



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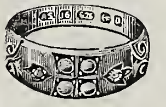
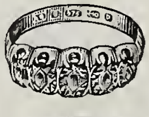
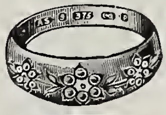


Ladies' 15ct. Ruby and Pearl Gem Rings, like drawing, and various other most saleable patterns. 12/6 each.



Ladies 9ct. Rings—	each.
Half-hoops, all corals ...	6/0
Ditto, garnets	6/0
Ditto, garnets & pearls...	6/0
Ditto, corals & pearls ...	6/0



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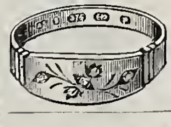

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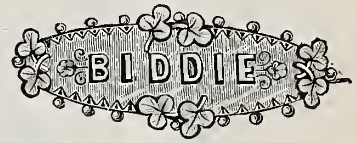

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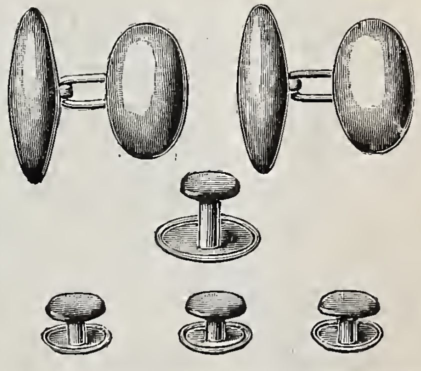

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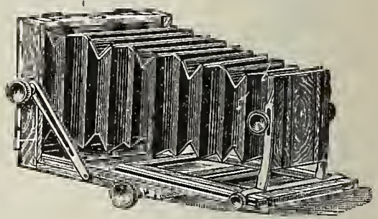

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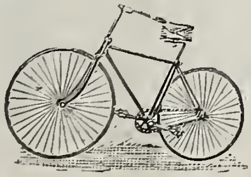

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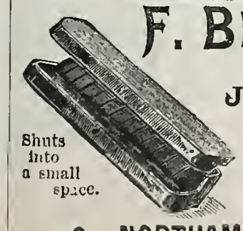

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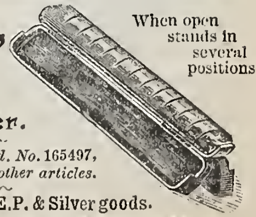

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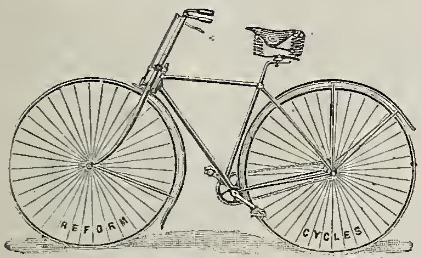

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Introduction—Horological Literature—Schools of Horology—Chronometer Makers—Watch Manufacturers—Turret Clock Manufacturers—Clock Manufacturers—Tools for Watch and Clock Makers—Inventors—Shopkeepers—Watch-case Makers—Timers—Engravers—Gilders—Platform Escapement Makers—Escapement Material Makers—Watch Jewel Makers—Balance-Spring Makers—Mainspring Makers—Pinion Makers—Wheel and Wheel-Cutter Makers—Hand Makers—Dial Makers—Screw Makers—File Manufacturers—Morocco Watch Case Makers—Watch Importers—Musical Boxes—Optional Hall-Marking at Geneva—Conclusion.

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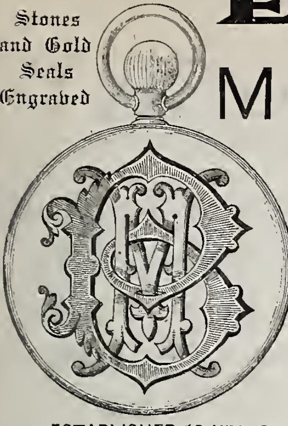

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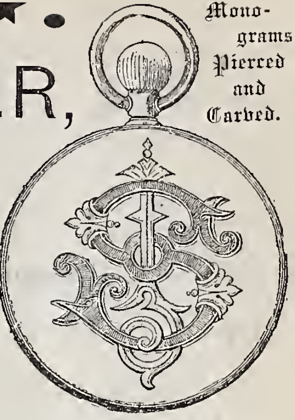

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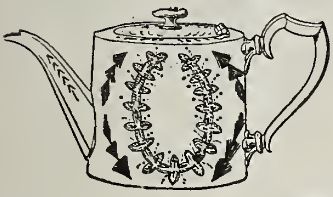

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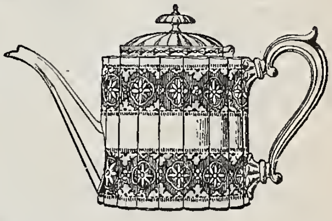

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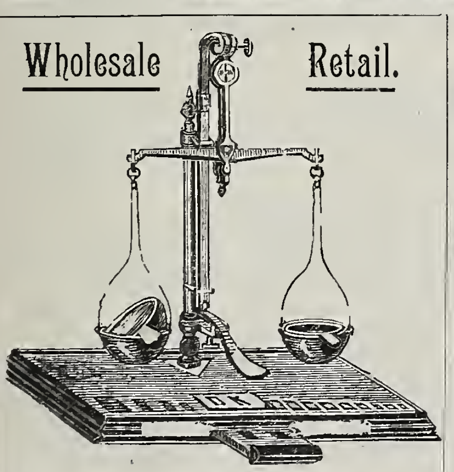

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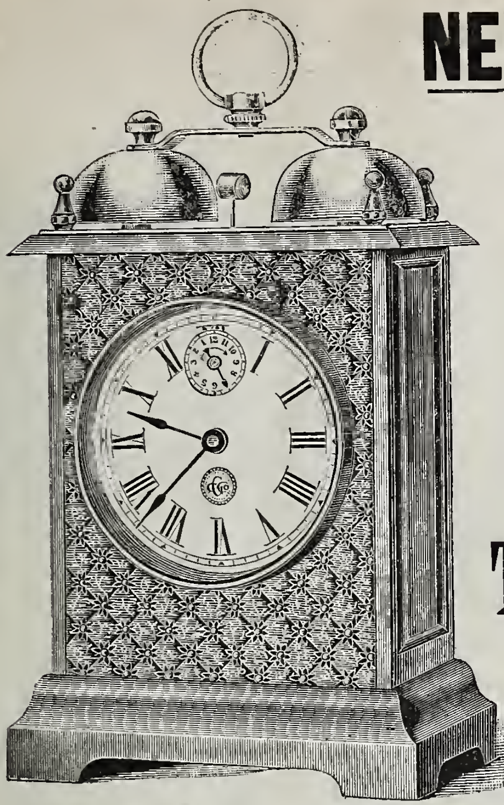
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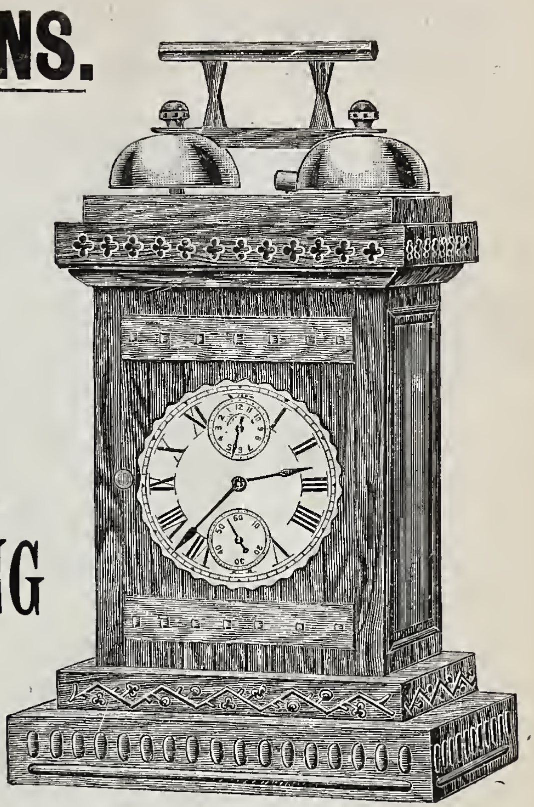
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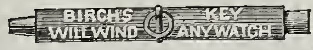

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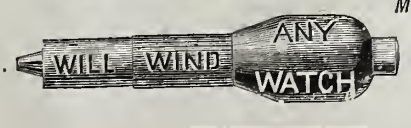

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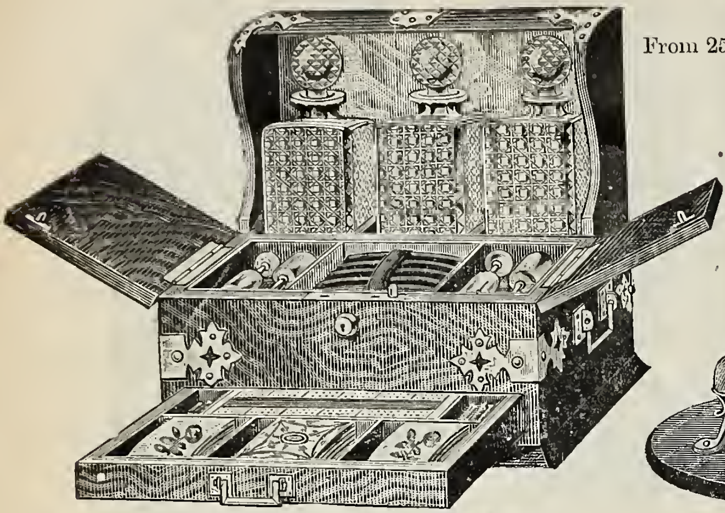

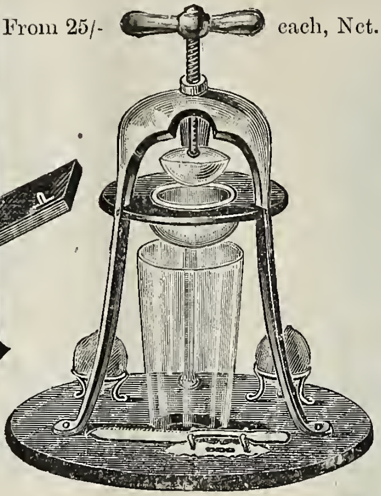

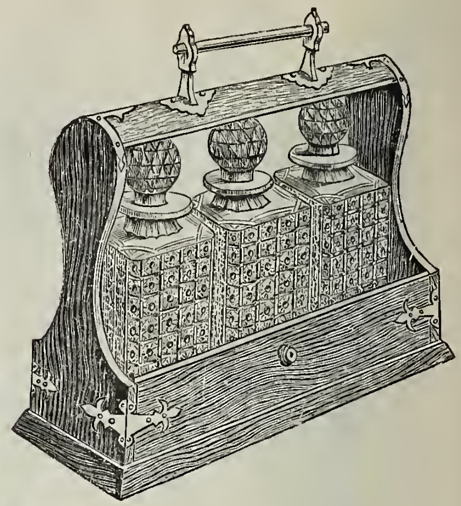

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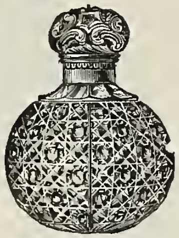

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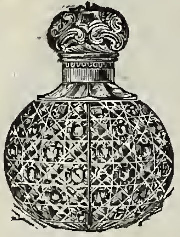

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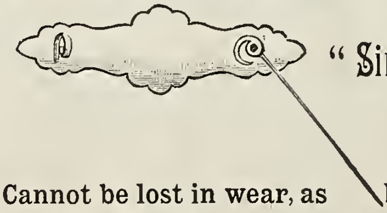

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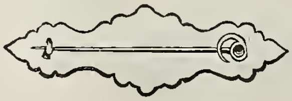

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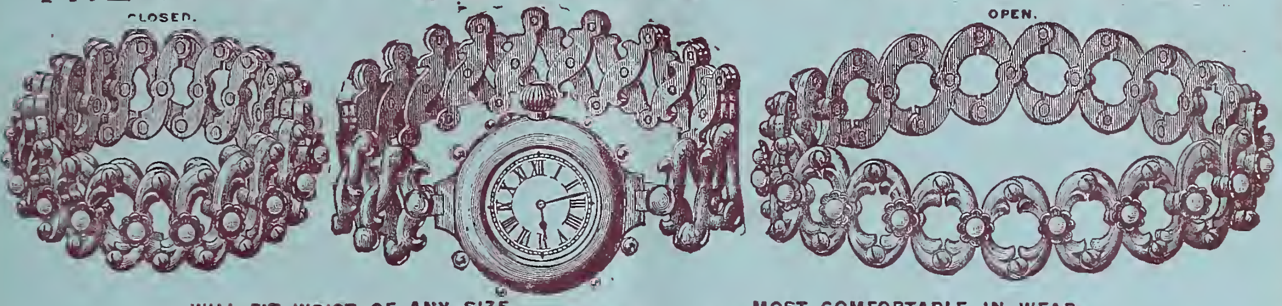

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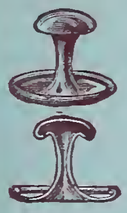

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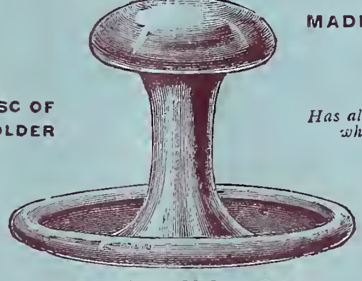

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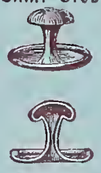

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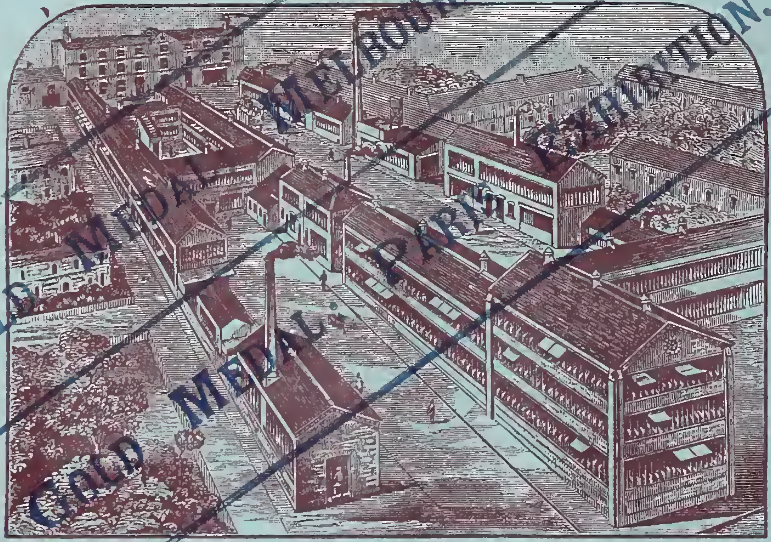

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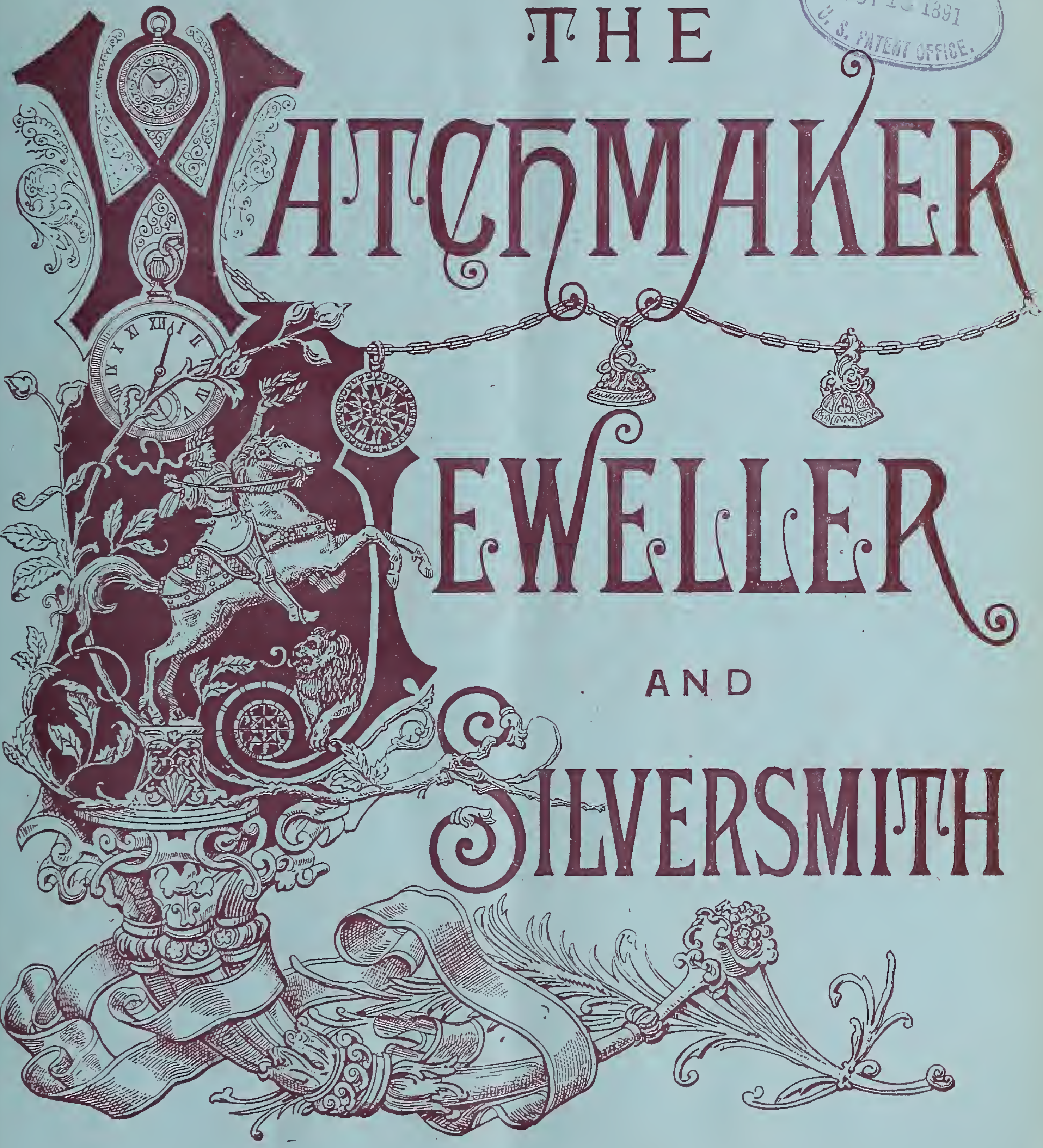

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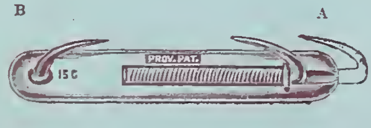

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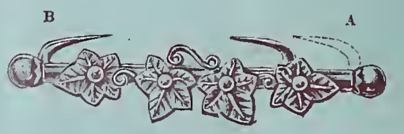

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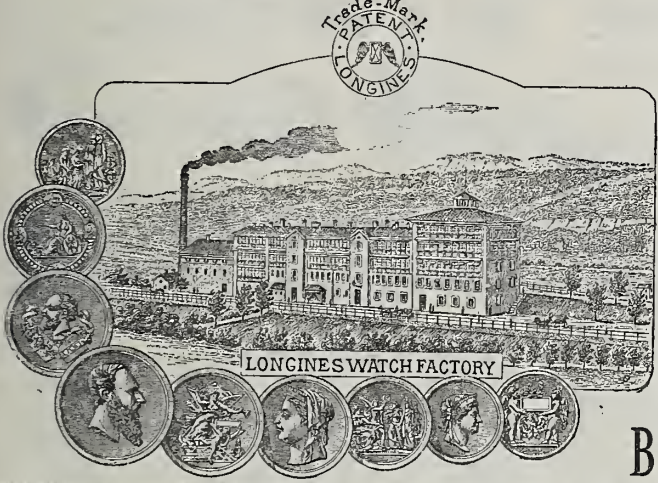

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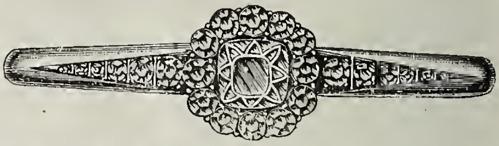

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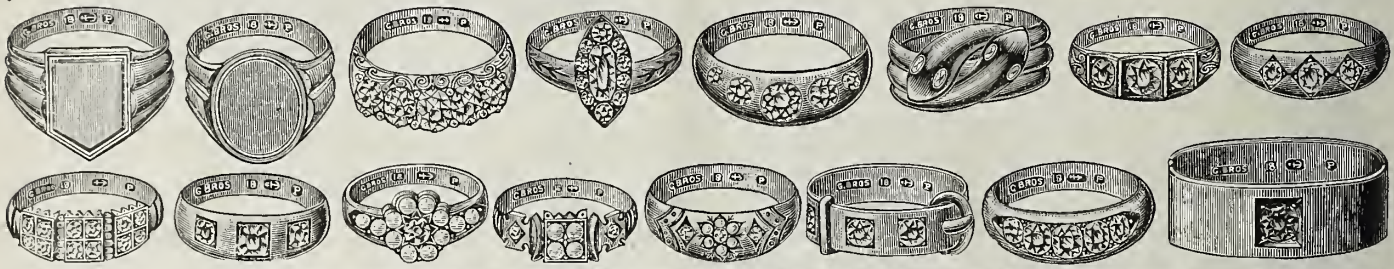

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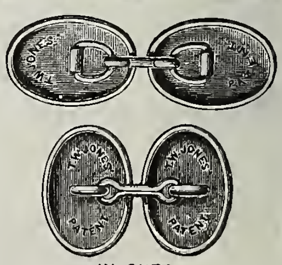

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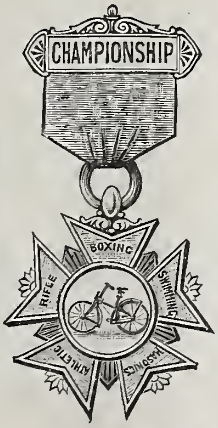

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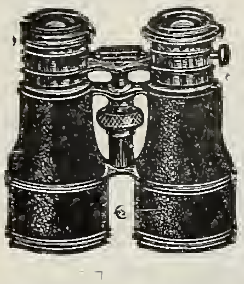

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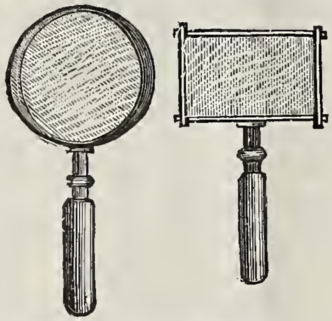

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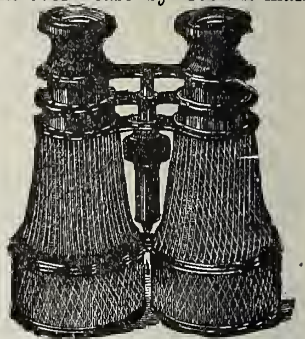

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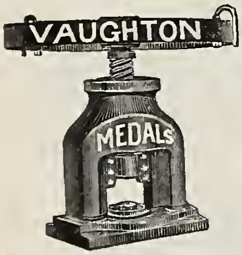

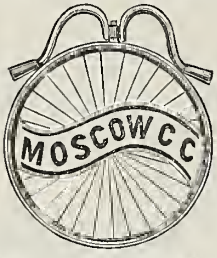

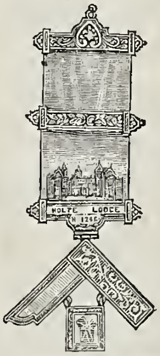

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9-ct. H.M. Imitation Diamond Rings, finest quality from	2/-	„
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Bracelet Watches, in Gold and Silver, kept in stock.
Every make of **Swiss Watches** supplied from stock.

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„ Real "VICTORIA," with Metal Dome	7/3	„
„ Pure White Metal, all through **"Argentine"** Keyless, with Dome, *will wear like Silver*	8/6	„
„ Pure White Metal all through Chronographs, Snap	8/-	„
„ „ „ „ Sprung Cases	8/6	„
„ Pure White Metal all through "Stag" full-plate Levers, Bold and Light Dials, with Registered Trade-marks "STAG'S HEAD" and the word "SILVERUS" inside the case, *without which none are genuine*	9-	„

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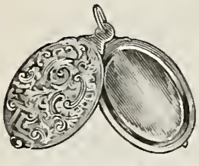

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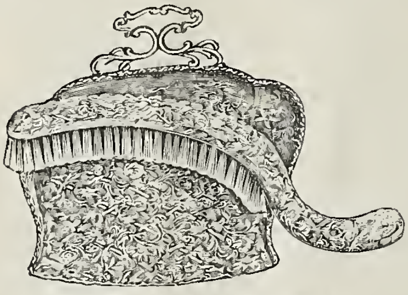

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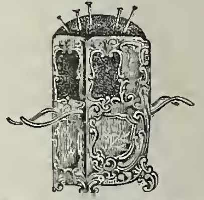

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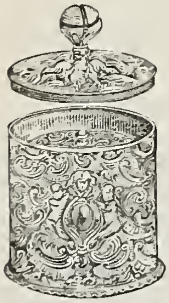

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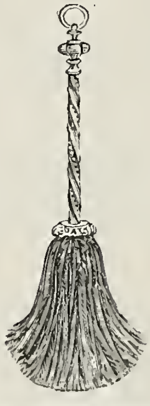

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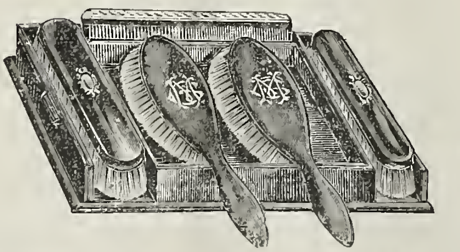
Feather Brush, assorted Colors, with Plated Handle.



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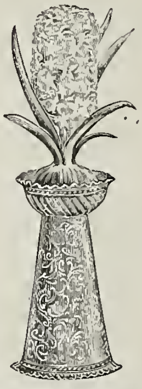

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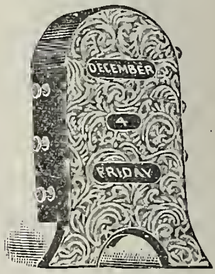

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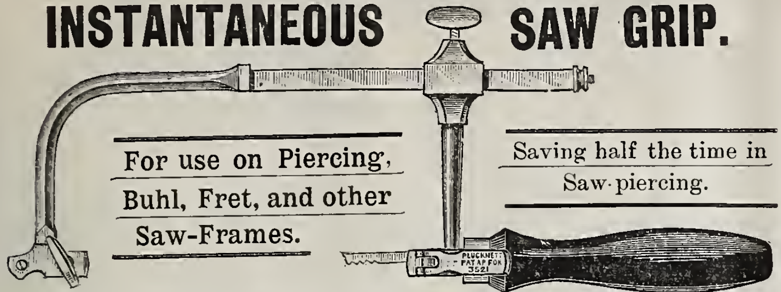

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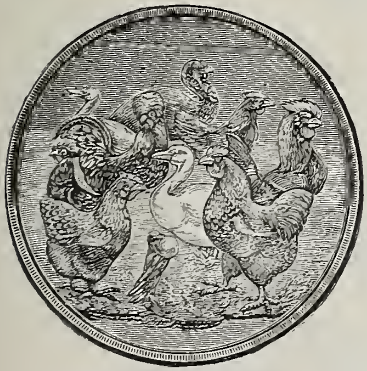

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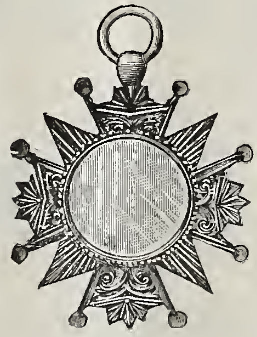

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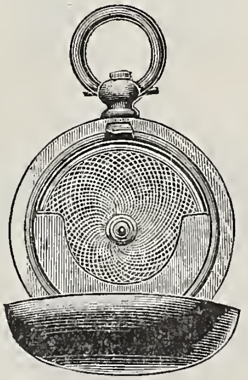

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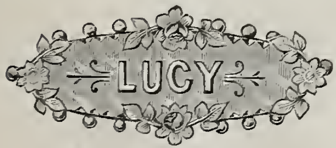

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As durable in wear as fine Silver.

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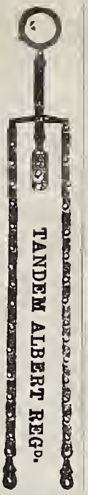
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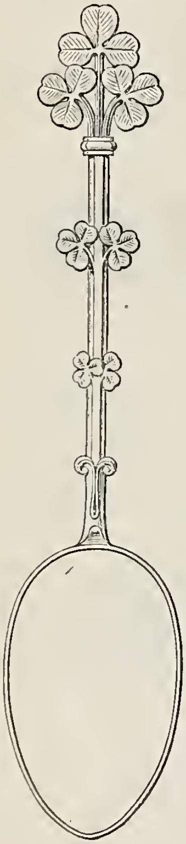

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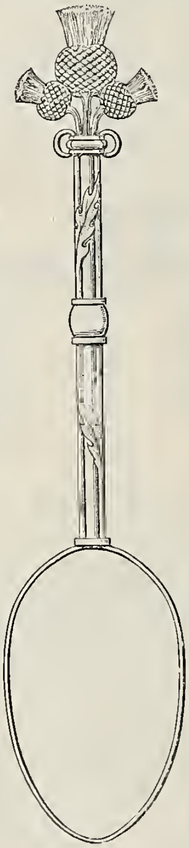
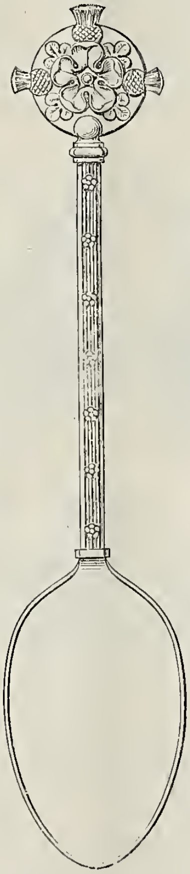
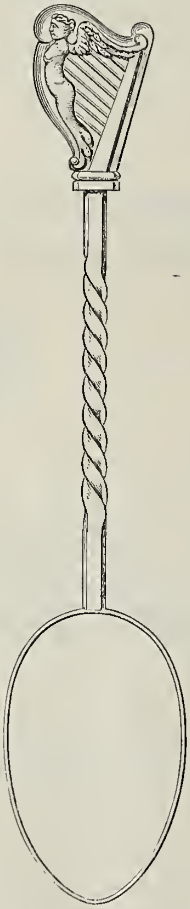


COMBINATION.



HARP.



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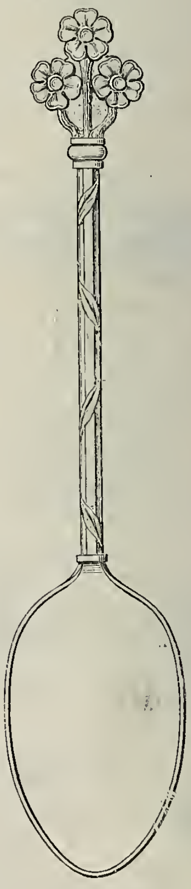

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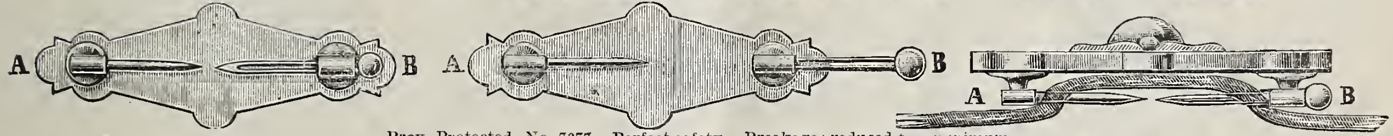

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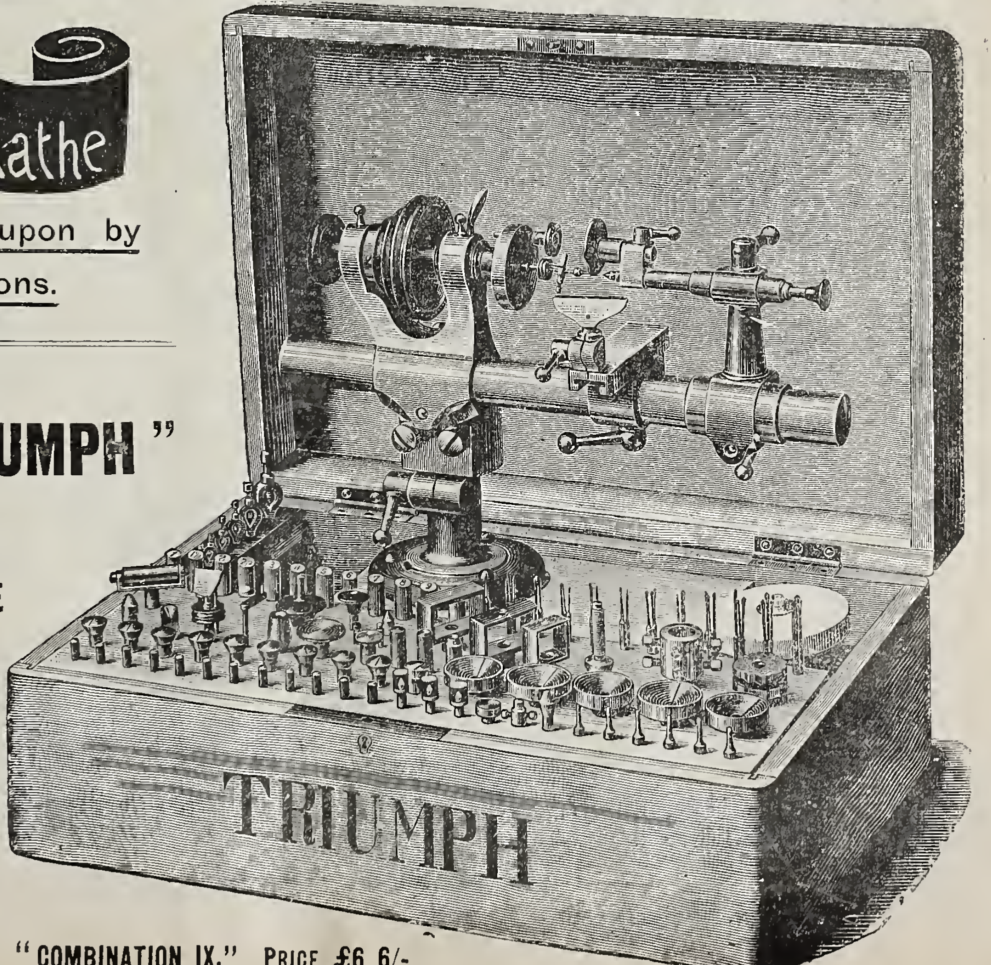

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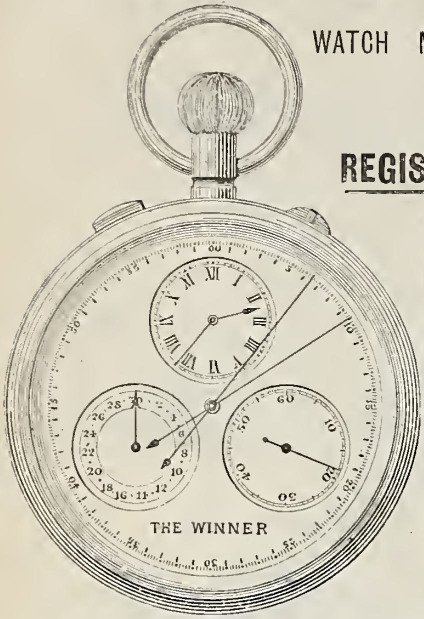

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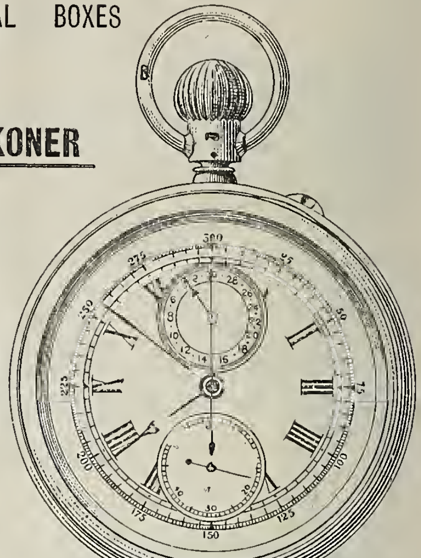

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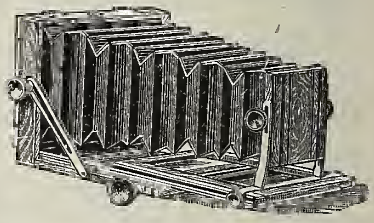

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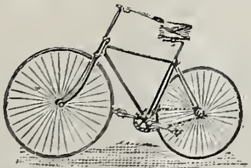

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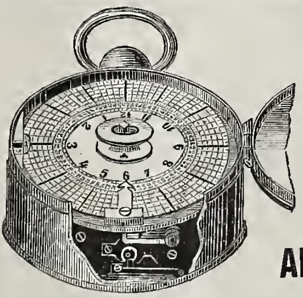

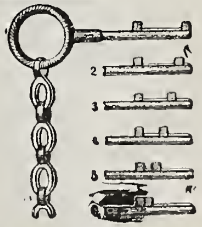

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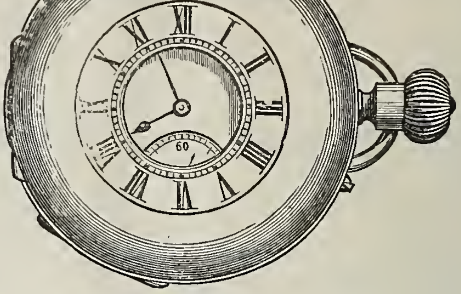

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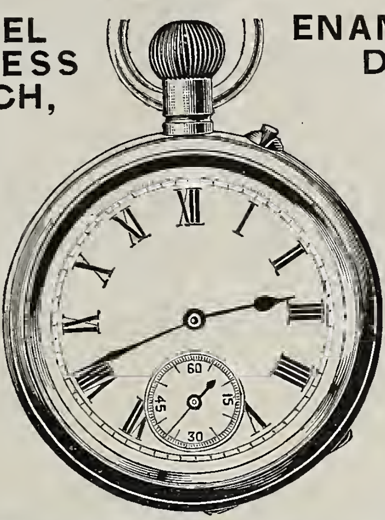

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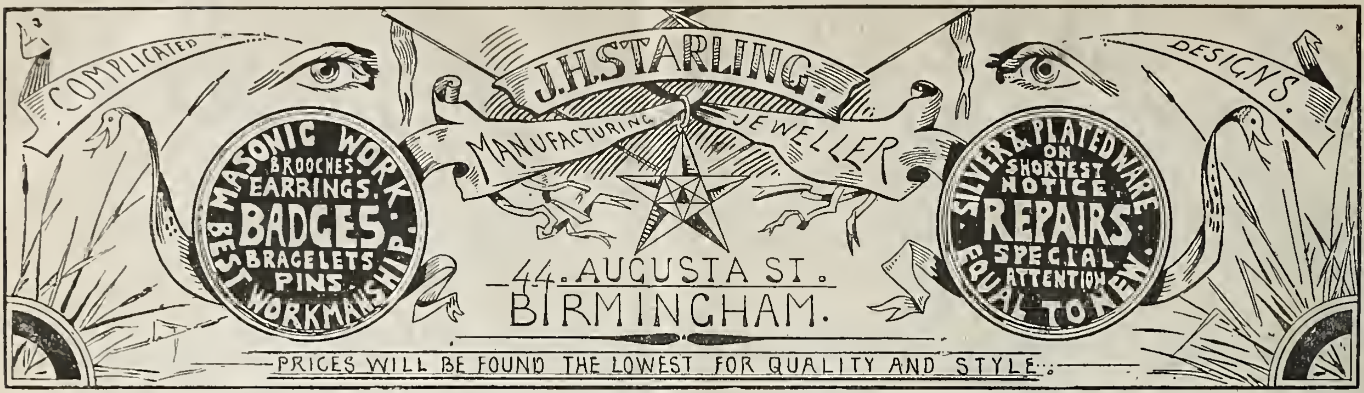
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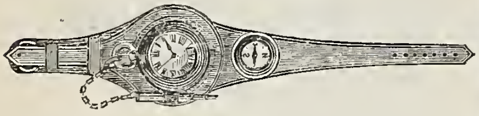
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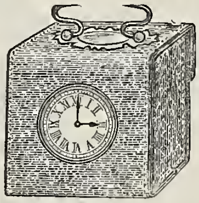

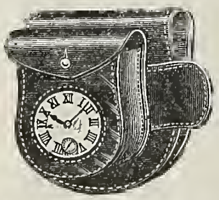

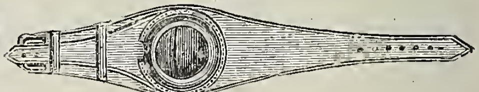
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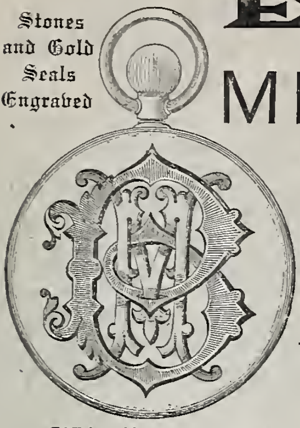

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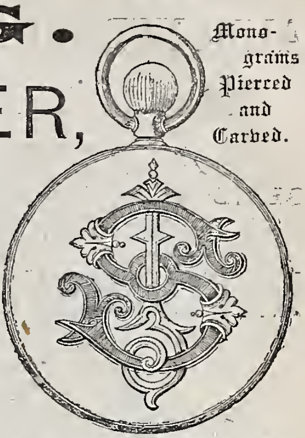

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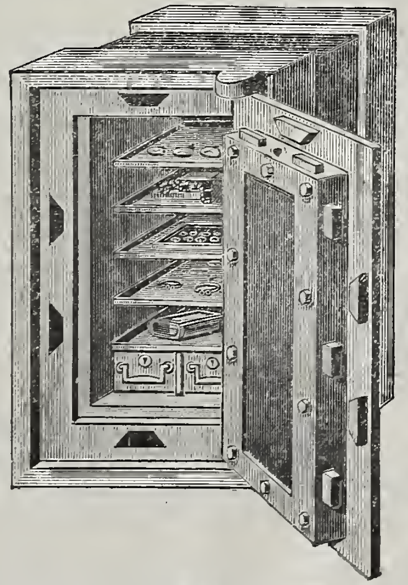

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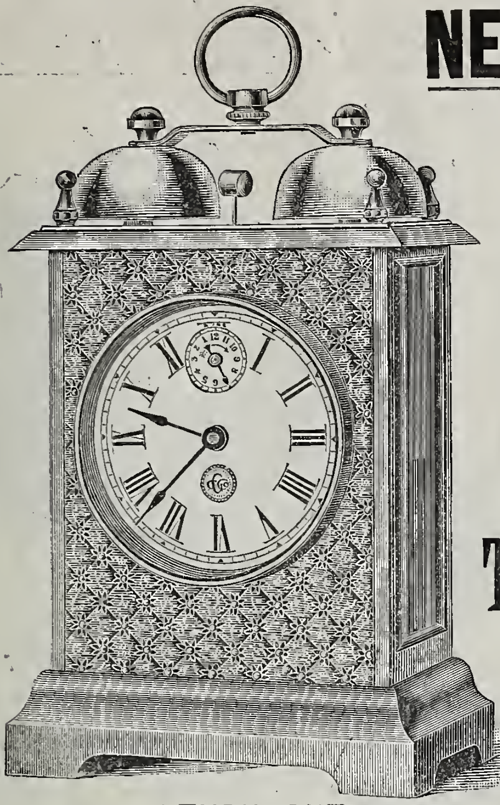
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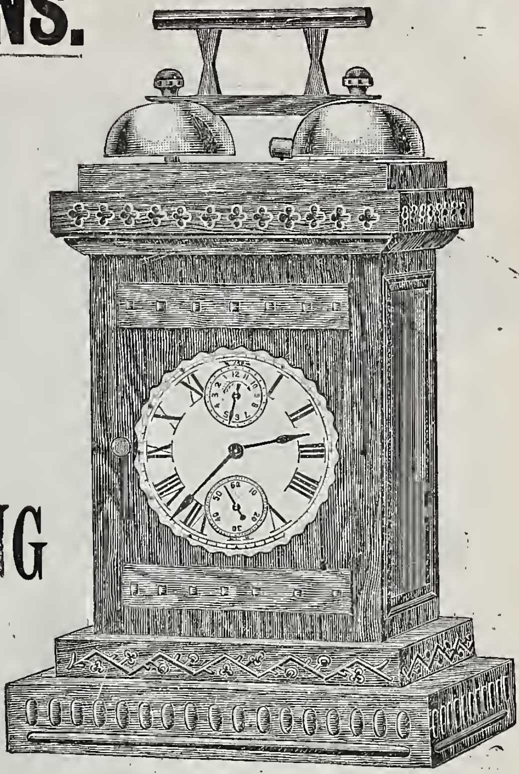
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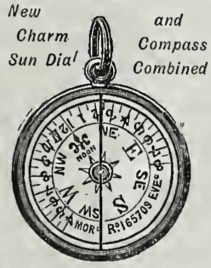

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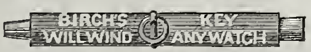

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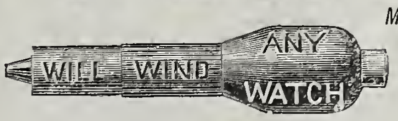

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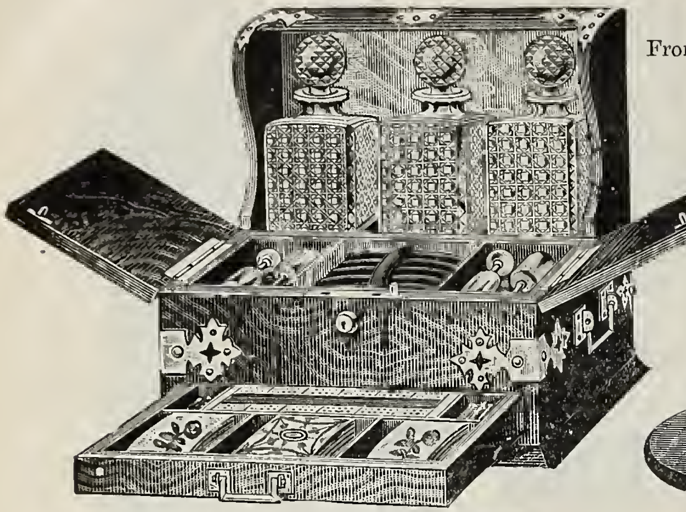

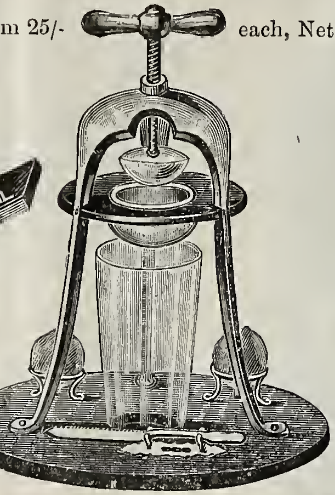

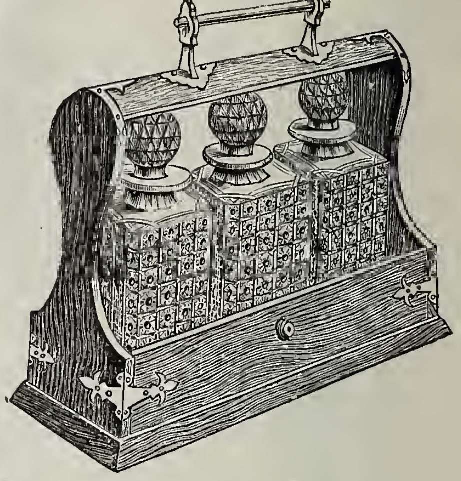

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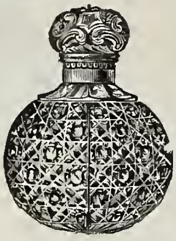

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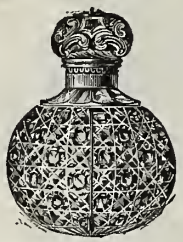

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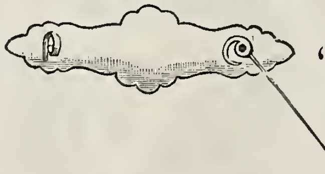

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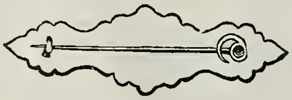

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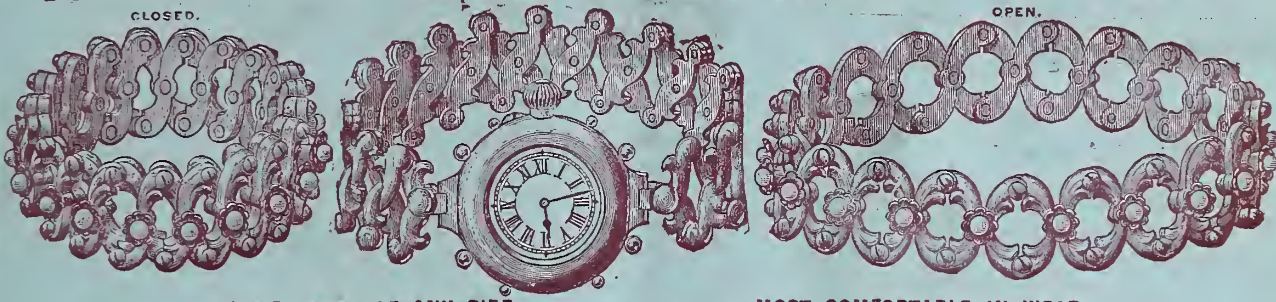

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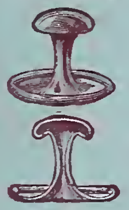

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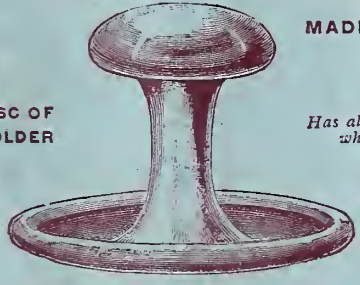

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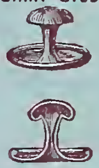

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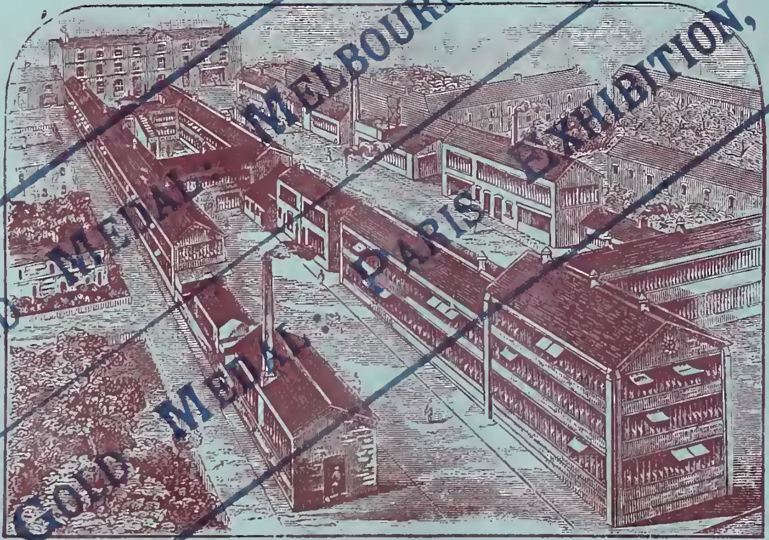

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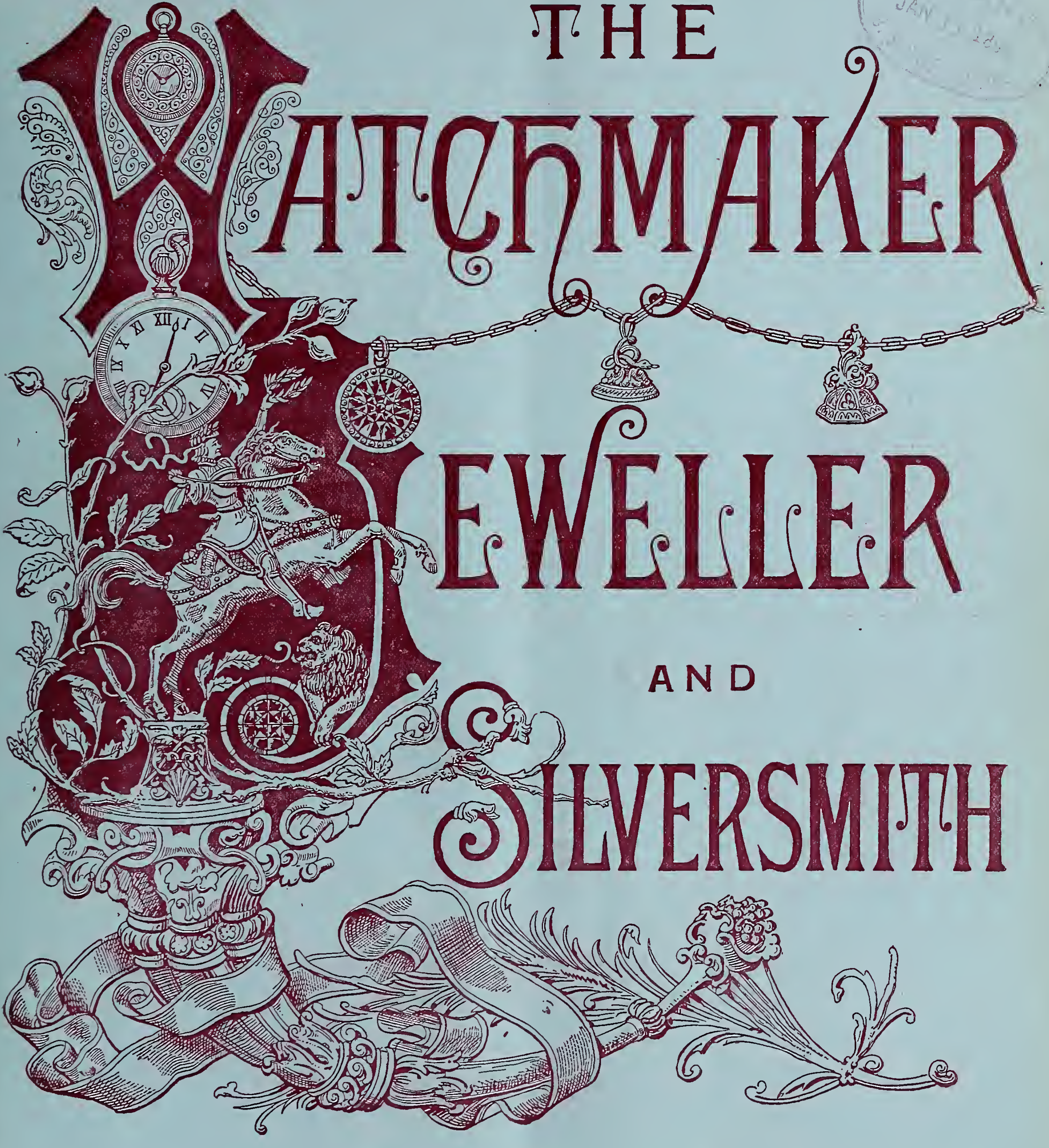

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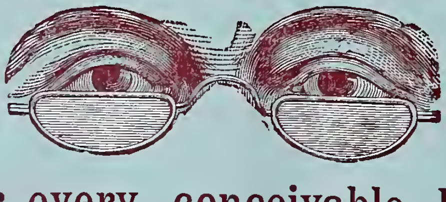

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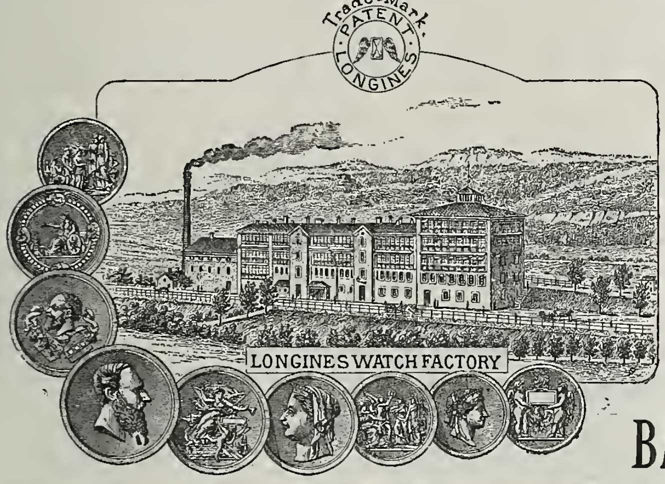

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KEW OBSERVATORY REPORTS:

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Yours truly,

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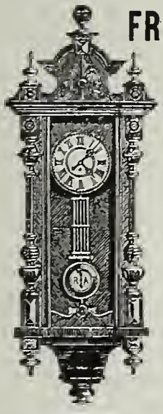

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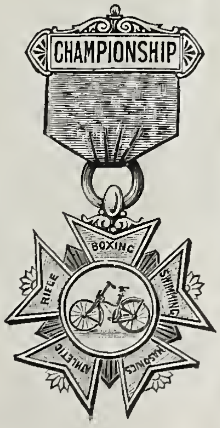

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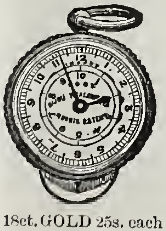

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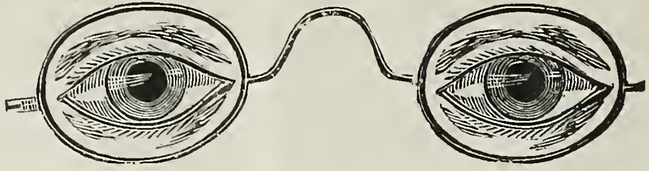

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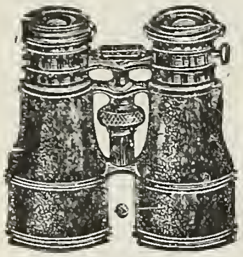

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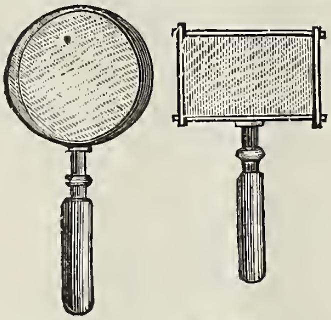

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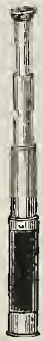

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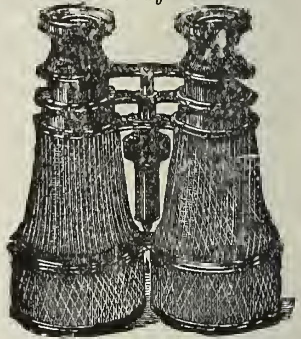

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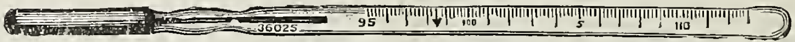

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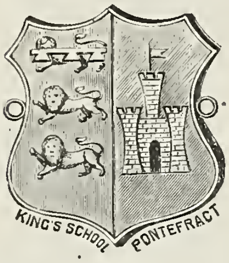

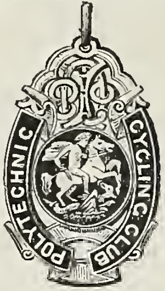

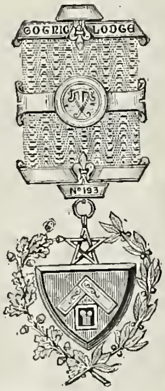

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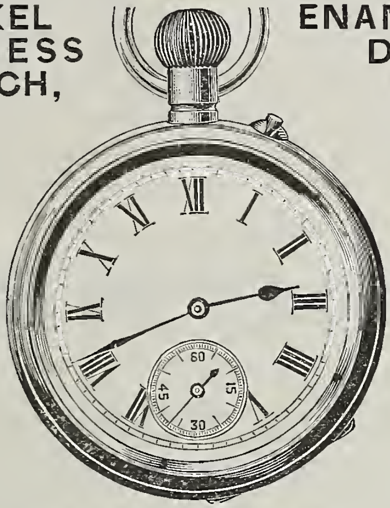

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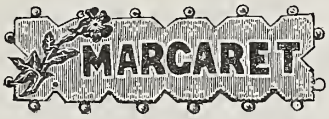

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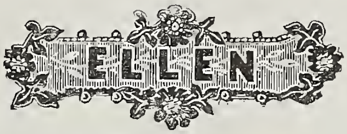

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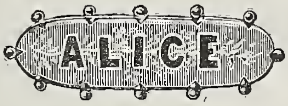

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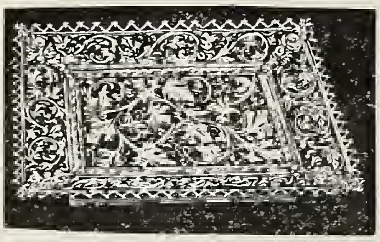

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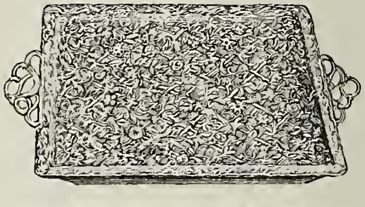

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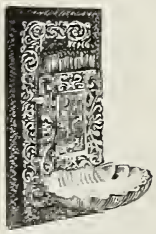

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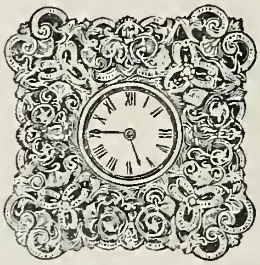

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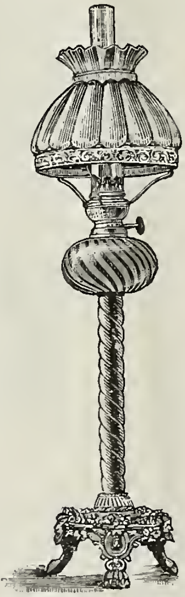

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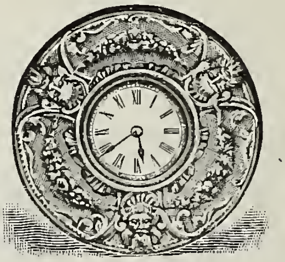

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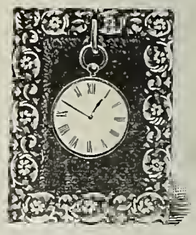

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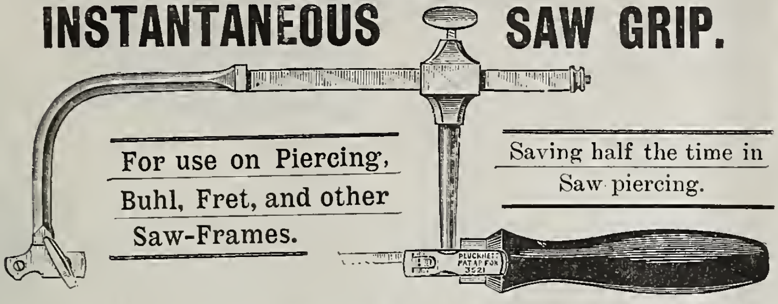

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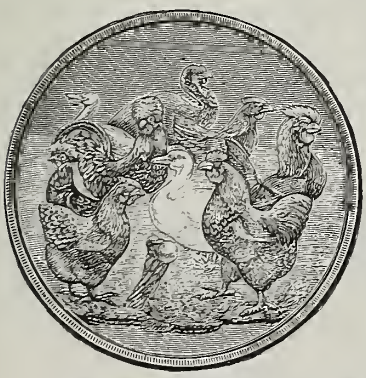

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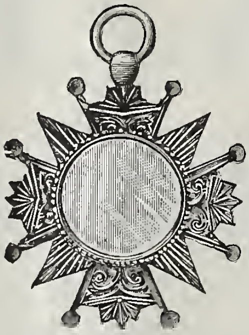

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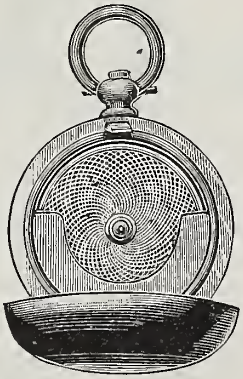

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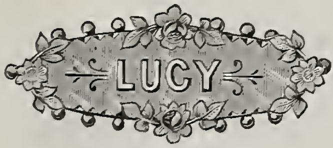

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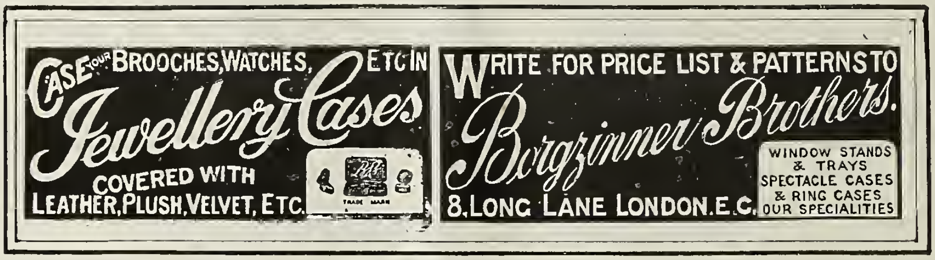

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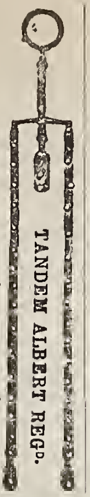
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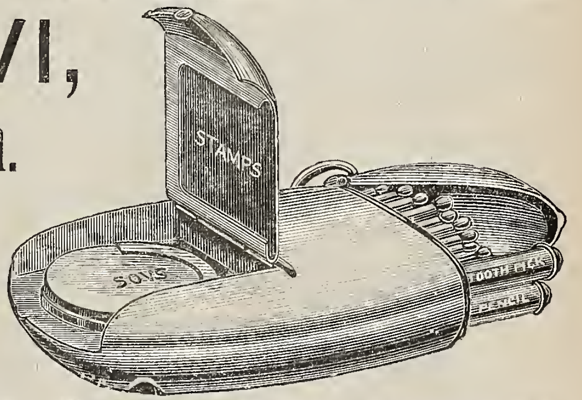

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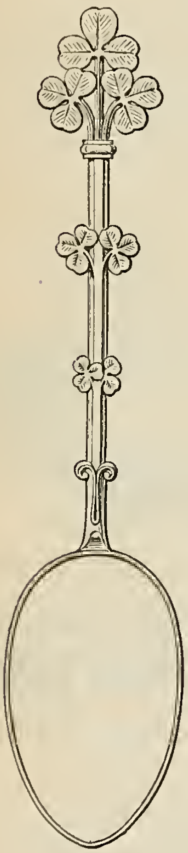
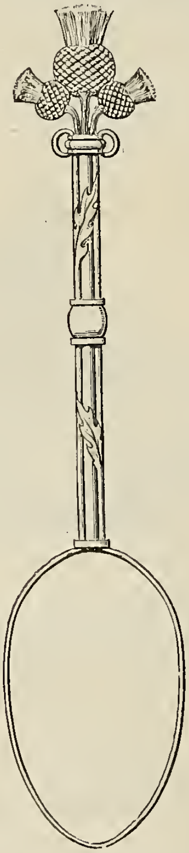
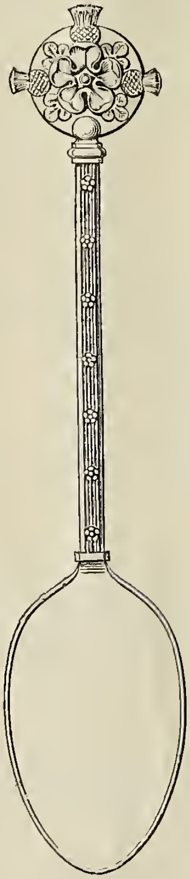


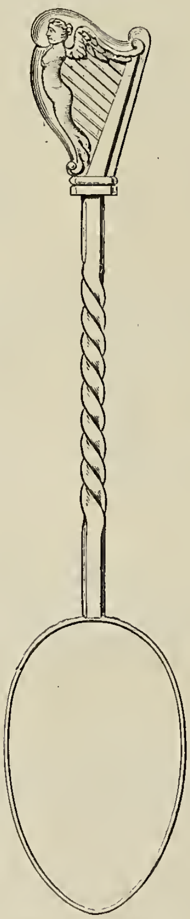
THISTLE.



COMBINATION.



HARP.



PRIMROSE
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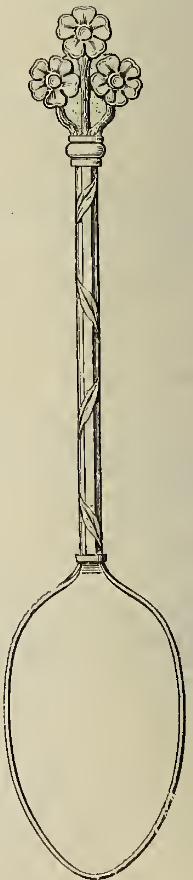

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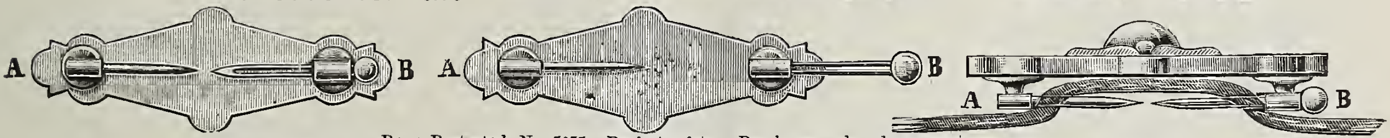

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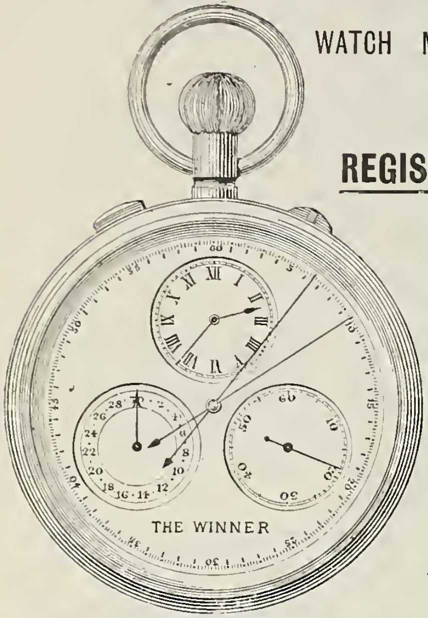

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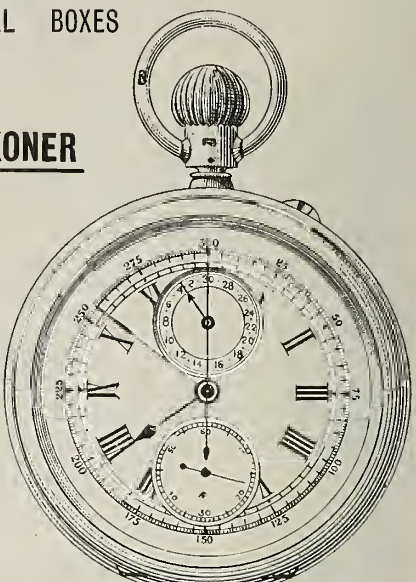

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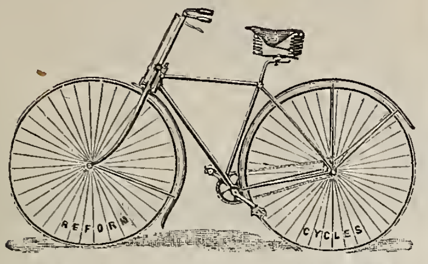

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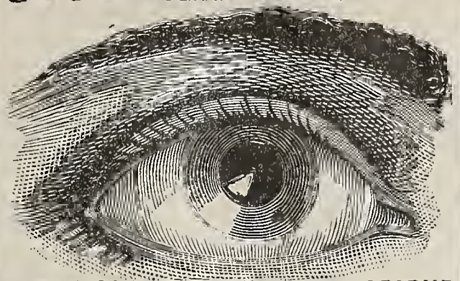

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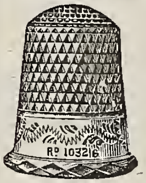

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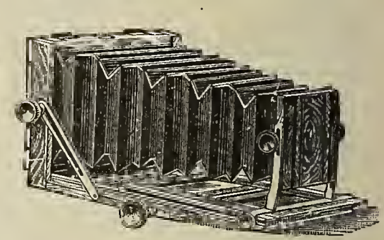

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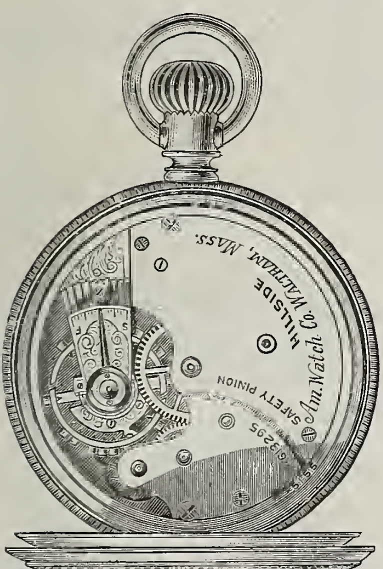
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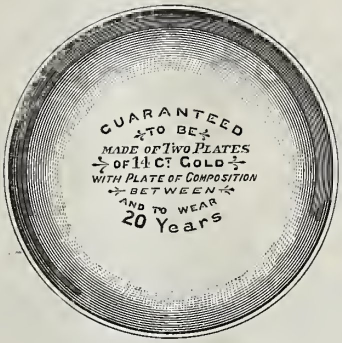
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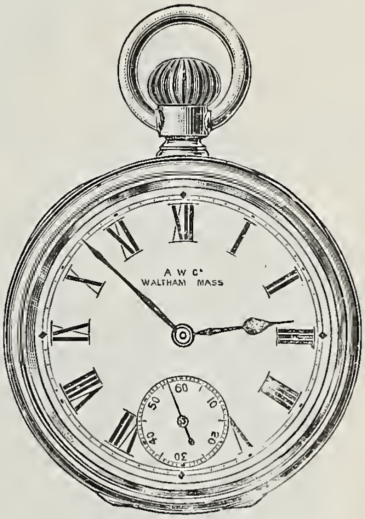
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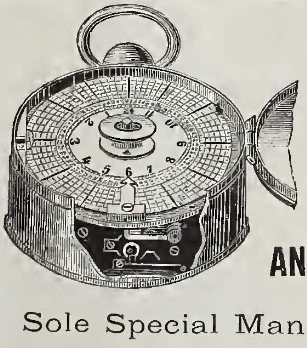

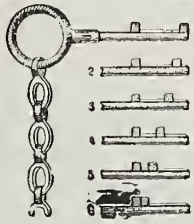

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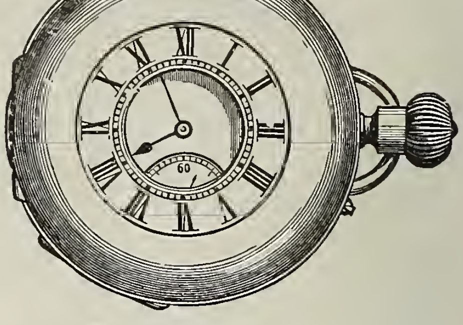

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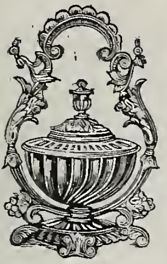
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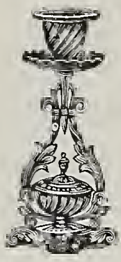
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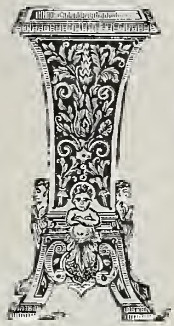
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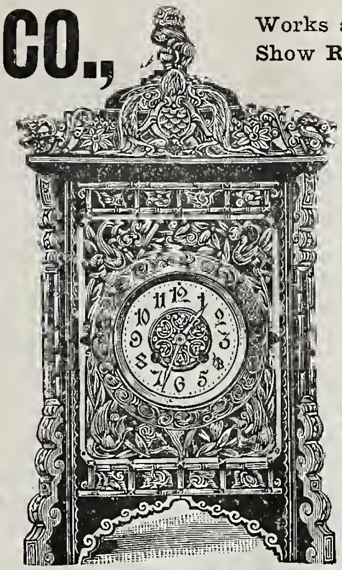
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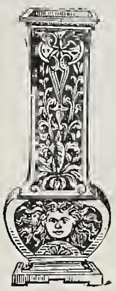
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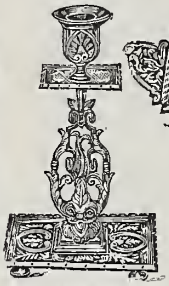
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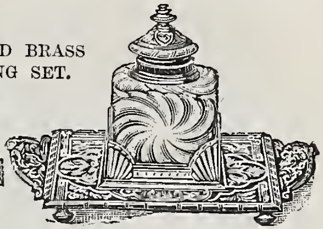
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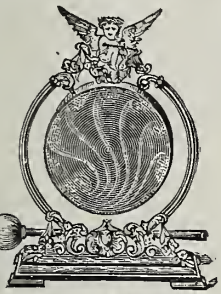
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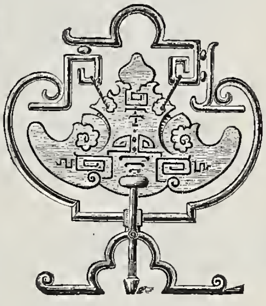
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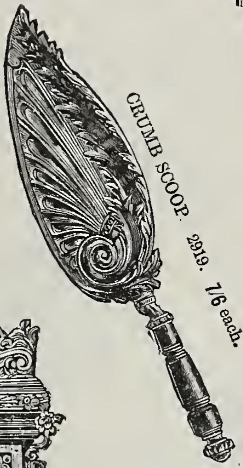
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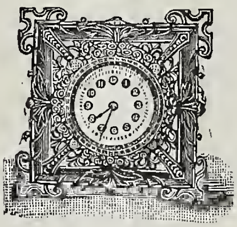
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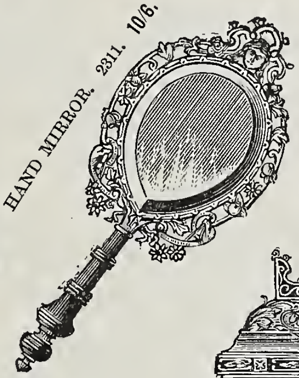
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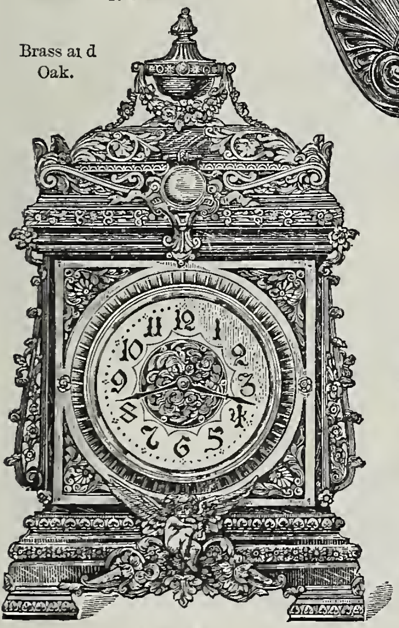
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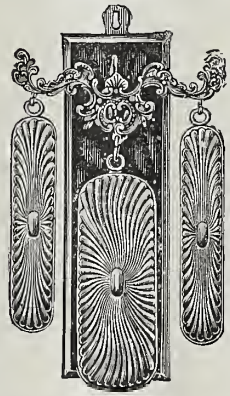
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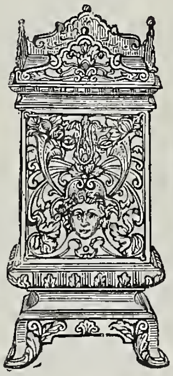
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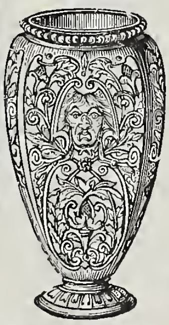
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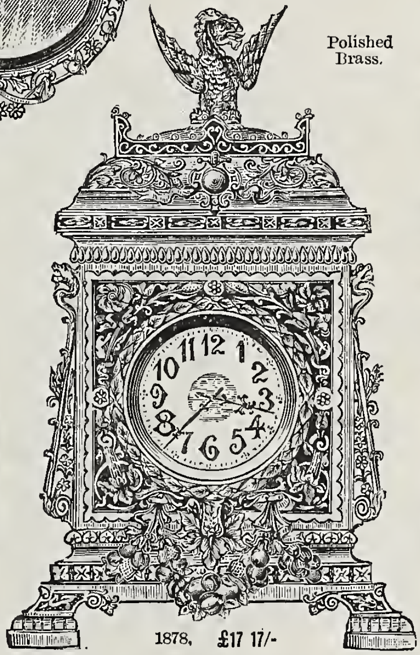
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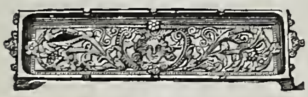
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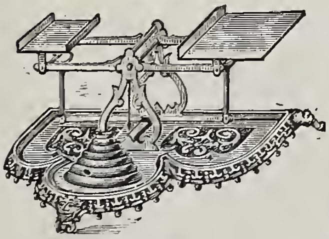
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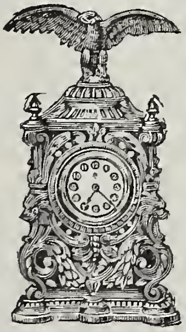
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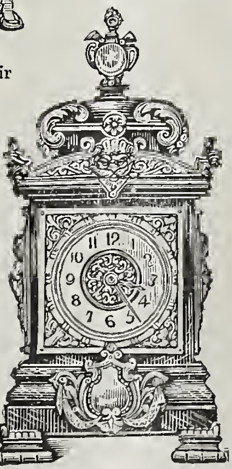
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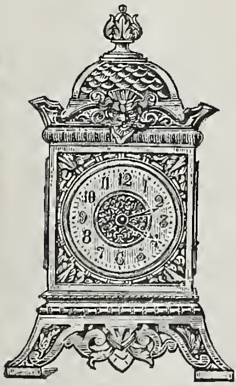
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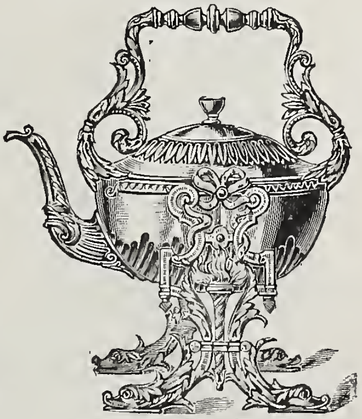
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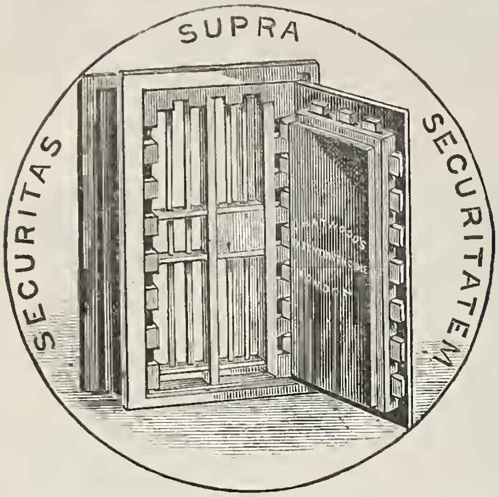

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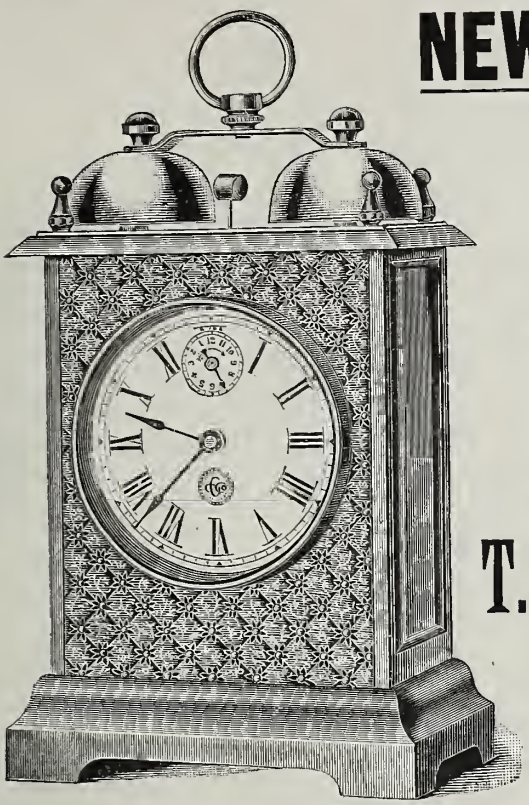
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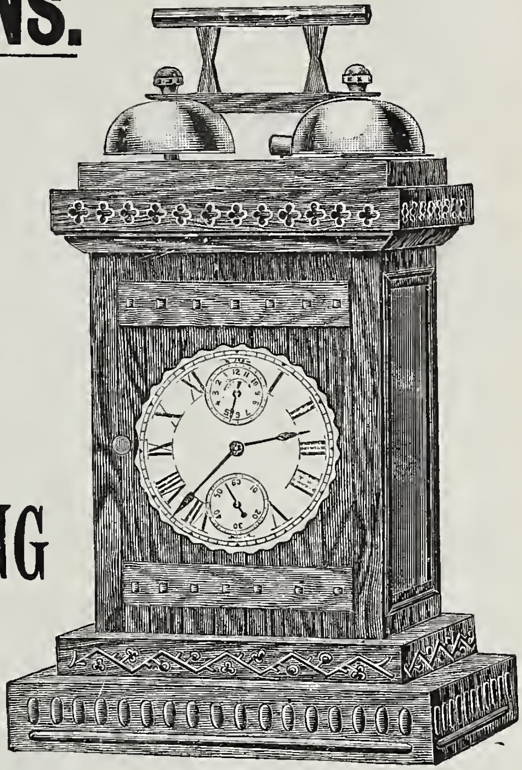
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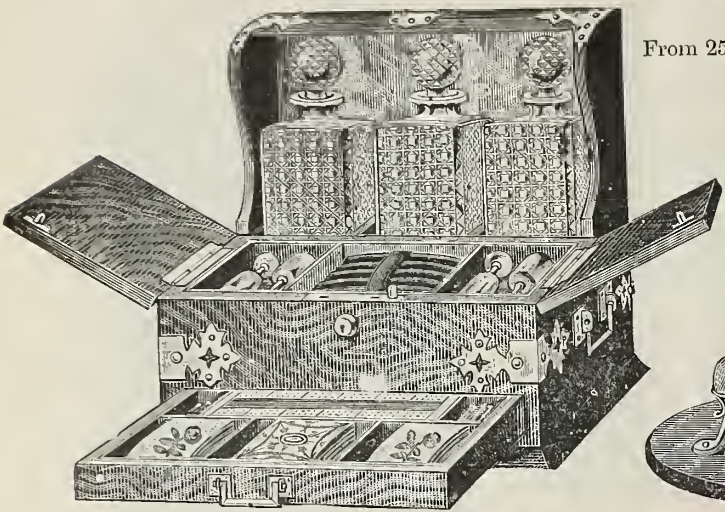

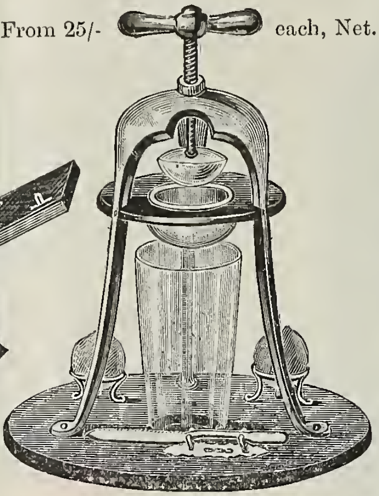

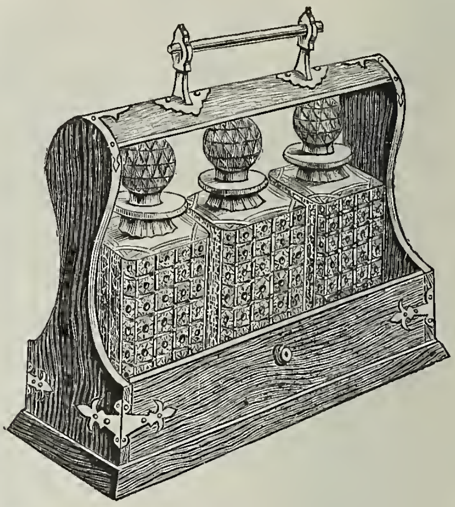

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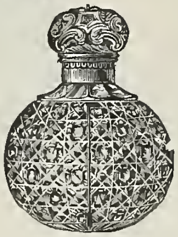

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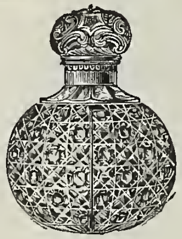

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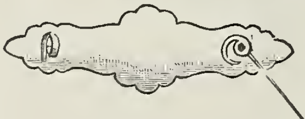

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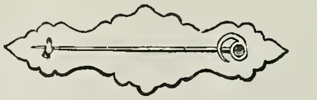

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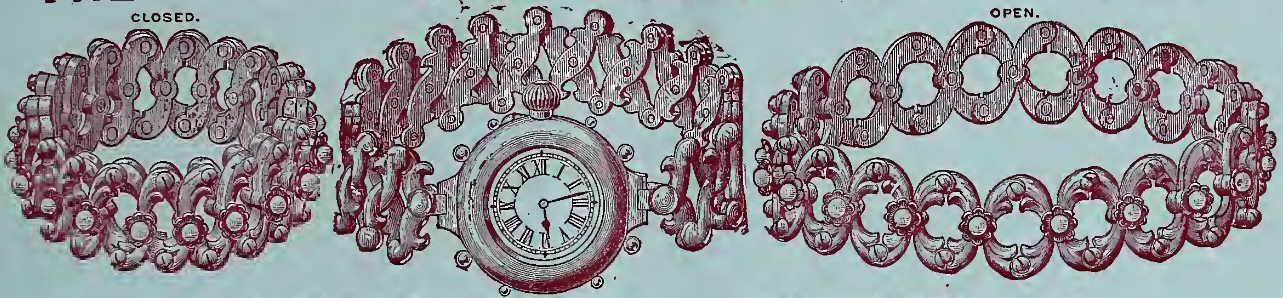

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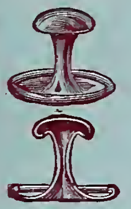

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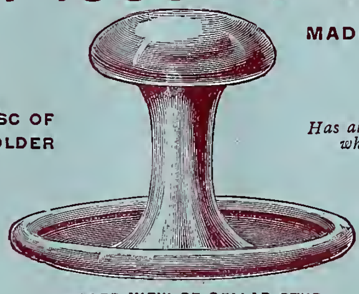

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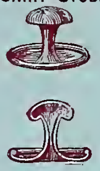

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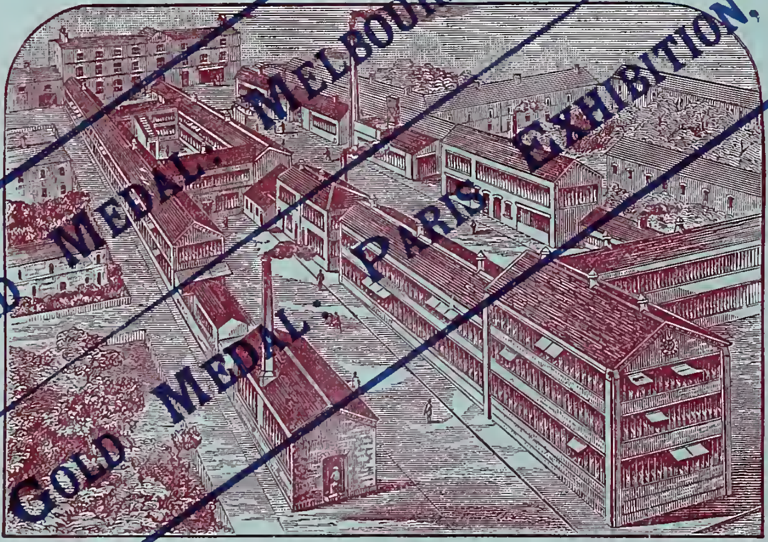

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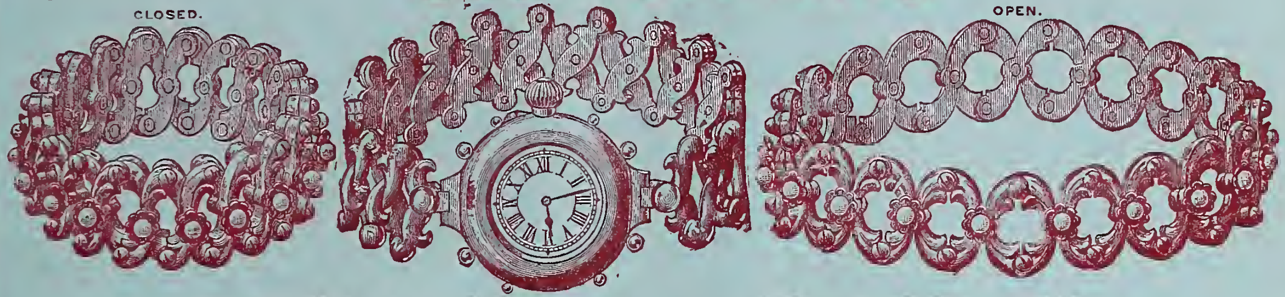

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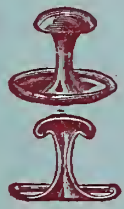

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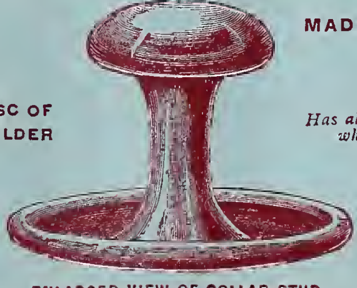

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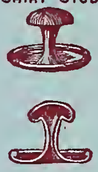

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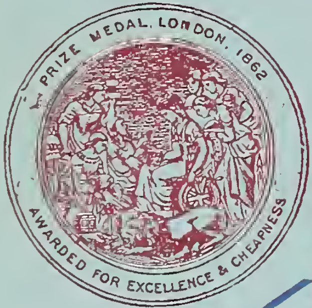
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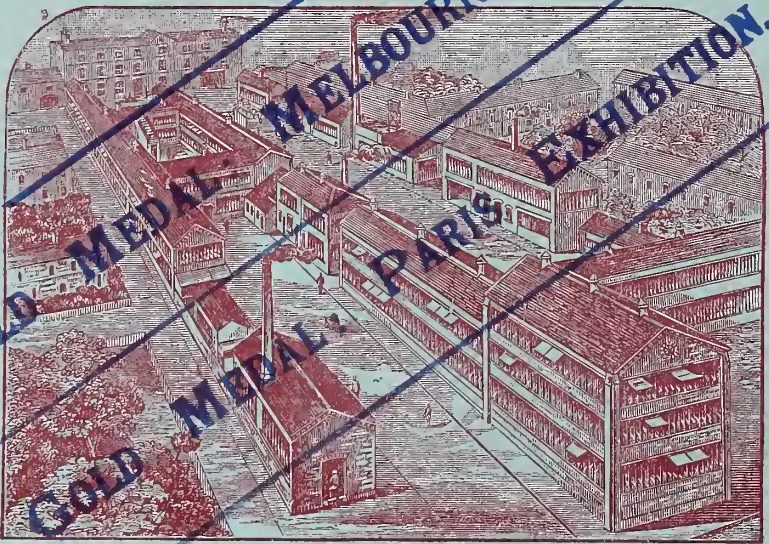

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